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THE AVICULTURAL MAGAZINE



BEING THE JOURNAL OF THE
AVICULTURAL SOCIETY FOR
THE STUDY OF BRITISH AND
FOREIGN BIRDS IN FREEDOM
AND IN CAPTIVITY

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THE MARQUESS OF TAVISTOCK
(January to May)

AND
DAVID SETH-SMITH
(June to December)

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REPORT OF THE COUNCIL FOR 1925

The year 1925 is fast drawing to a close, and in looking back we have to confess that it has been rather an anxious one for the Society. First there was the amalgamation with the Foreign Bird Club, which took place on 1st January, 1925. A few months later that was followed by change of editor, and then came the death of our president, Mr. Astley. All these events involved a certain amount of extra work and anxiety. However, we are glad to report that we have now successfully surmounted the difficulties, and our future to-day looks far more hopeful than it has done for some time past.

Our membership increases month by month, and our Magazine has been in such demand that many of the monthly numbers for the past year are out of print and therefore unobtainable.

We would like to tender our best thanks to all who have contributed to the welfare of the Society during the past year. To authors, donors to the illustration and general funds, and to Mr. A. Ezra, Mr. Delacour, and Captain Stokes, who presented coloured plates.

We would also like to thank Lord Tavistock for his services as Editor, and Mr. T. H. Newman for preparing the Index both to the Magazine and to the special book on "Aviculture", and to Miss Chawner for her valuable translations of French articles. During the year the Society's medal has been awarded to Mr. A. Ezra for breeding *Spreo superbus*, and to Mr. Shore-Baily for breeding *Turdus olivaceus* and *Penthetriopsis macrura*.

(Signed for the Council) E. MAUD KNOBEL,

Honorary Secretary and Treasurer.

December, 1925.

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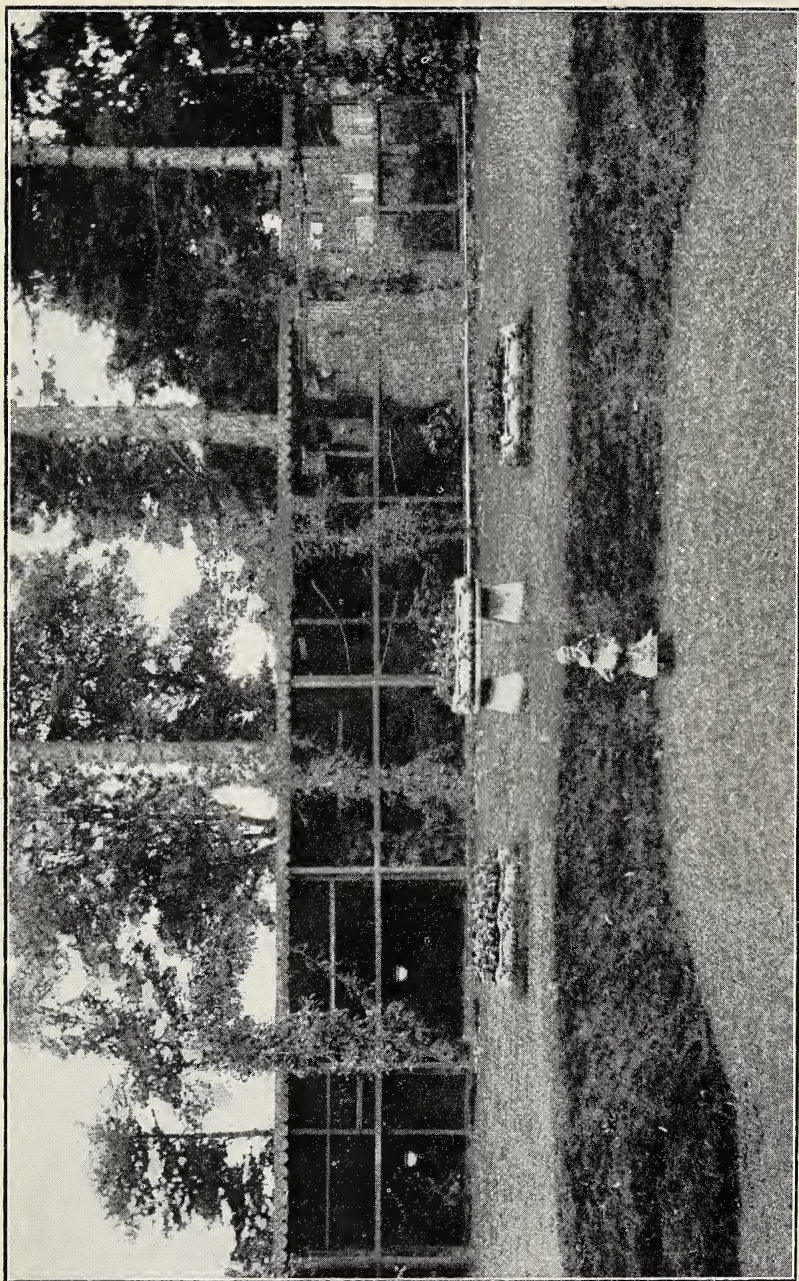
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JANUARY, 1925.

BULBULS

By J. DELACOUR

The Bulbuls (*Pycnonotidæ*) are distinguished from the *Timeliidæ*, which they resemble, by their short feet, the length of the tarsus never exceeding that of the middle toe together with its claw. Besides this they invariably have some long hairs proceeding from the nape; these may sometimes be short or inconspicuous, but they are never absent altogether.

Bulbuls have sweet voices; they usually frequent gardens and are very common in their native countries. The males and females are often alike; they feed chiefly on fruit, but also eat insects; they are not migratory and build cup-shaped nests in which they lay spotted eggs.

Several kinds of Bulbuls are frequently imported; they live well either in a cage or an aviary, according to the species. Different species require different feeding, so we will divide them into two groups and indicate how to feed and care for each of them.

Bulbuls occur in South and Eastern Asia, throughout Africa, in the Malay Archipelago, the Philippines, and the Moluccas.

GREEN BULBULS

Green Bulbuls, sometimes called Fruit-suckers (*Chloropsis*), inhabit the South of Asia, the Malay Archipelago, and the Philippines. Their short tarsi ally them to the Bulbuls. Their colour is usually brilliant bright green, beak about the length of the head, slender and slightly curved. They have no crest, have rounded

wings, and short square tail. They live in trees, feeding chiefly on the insects which they find among the foliage; they also partake of nectar from flowers and soft fruits. Their voices are strong and pleasing. As a rule they are about the size of a small Thrush.

These birds are often imported, particularly some Indian species, and thrive well in a cage; they are long-lived, very beautiful, tame, and warble pleasantly. They do equally well in a flight aviary if certain precautions are observed; some have even spent the winter out of doors, but it is safer, nevertheless, to give them heat during bad weather.

The best food is bread and milk sweetened either with sugar or honey, insectivorous mixture, and sweet fruit, with a few mealworms. They will also do well on some of the Sugar Birds' sop, or hard-boiled egg, crushed biscuit, and ants' eggs mixed. In any case they should have some mealworms and as many live insects as possible.

The Gold-fronted Green Bulbul (*C. aurifrons*) is the most commonly imported of this genus. It is bright green with pale blue wing-coverts. The forehead and crown of the head, orange yellow; throat and cheeks dark blue surrounded with black, which extends to the lores, the sides of the neck, and base of the throat; a wide line, beginning at the eye, is itself surrounded by a yellow line. The female is like the male only slightly less brilliantly coloured.

Malabar Green Bulbul (*C. malabaricus*). This bird also is occasionally imported. It only differs from the preceding by its black throat (the cheeks only are blue) and by the absence of the yellow collar. The female is like the male. This species inhabits the western part of India and Ceylon.

Yellow-headed Green Bulbul (*C. icterocephalus*) from Malacca and Sumatra differs from the above in having the forehead and a band round the throat yellow, a blue tail, and the wings marked with blue. It has only been imported once, and is a native of Malacca and Sumatra.

The Blue-whiskered Green Bulbul (*C. cyanopogon*) is smaller than the preceding species and its green head has merely a shade of yellow on the forehead. The female is not black-throated. It is a native of the Malays, Sumatra, and Borneo.

Jardon's Green Bulbul (*C. jerdoni*) inhabits India and Ceylon. It is entirely green, with black lores, chin, and throat, and a blue moustache. One specimen was imported in 1908 by the late M. E. Boulet. It lived five years in a cage, and was fed on honey and water, fruit, and hard-boiled eggs crushed with potato.

Hardwick's Green Bulbul (*C. hardwicki*), which is found in the Himalayas and the Malayan Peninsula, is the most beautiful of the genus. Larger than any of its relations, the male has upper part of the body green, tinted on the head with tawny yellow. The lower part of the head, throat, and the upper chest are black, with a large cobalt-blue moustache. The body underneath is bright orange-brown, tail blue, washed with purple; wings green, with the small coverts pale blue, the primaries black edged with purplish blue. The female is green with a pale blue moustache, the belly orange brown, and the coverts pale blue.

This splendid bird is imported from time to time and does well in captivity.

I shall place the magnificent Blue Drongos on Fairy Blue Birds next to the Green Bulbuls.

One species, *Irena puella*, has twice been imported. The London Zoological Gardens still have a female which has lived there five years. I obtained a pair, unfortunately in very bad condition, which did not live. The Blue Drongo owes its common name to a certain affinity with the true Drongos, among which it was formerly placed. It is found in Ceylon and Southern India, in Malaya, and Indo-China. It is as large as a Blackbird, the beak strong and hooked. The male is brilliant glossy blue with lilac shadings. The long upper tail-coverts are of the same blue. The rectrices are black; the under parts of the body, sides of the head, flights, and the wing-coverts are intensely black. The beak and legs are black, the eyes red. The female is dull blue with brighter tips to the feathers.

The Blue Drongo lives in small flocks or in single pairs; they frequent the large forest trees and feed chiefly on fruits.

Psaroglossa spiloptera, long considered to be a Starling, may be placed here; it has been imported several times. It is a grey bird with black markings, brown above with a reddish chestnut throat

and pale rust-coloured under parts. The female is brown above, pale brown below. It is found in the Himalayas, Northern India, and Burmah.

THE TRUE BULBULS

These birds have rather small, straight beaks, and the head usually ornamented with long plumes which they can raise into a crest. The sexes are alike and their prevailing colours are grey and brown, relieved with white, black, or yellow, rarely red.

Bulbuls are plentiful and tame in most countries where they are found—Asia, Africa, the Malay Archipelago, Philippines, and Moluccas. They are frequently met with in gardens.

In captivity they may be given the same food as Thrushes—insectivorous mixture, boiled rice, and fruit. They are generally robust and some species are hardy enough to pass our usual winters out of doors. They sing a short but lively song, and some species imitate the song of other birds and become really remarkable songsters ; these do better in cages, but as a rule they are aviary birds. They breed readily if they have space and cover to their liking. Several species have reared young, but more often these vanish, and this is due to an insufficient supply of live insects, which should be provided in quantity when the birds have hatched.

The Black Bulbuls (*Hypsipetes*) are distinguished by their stout bodies and forked tails. The head is garnished with slender plumes. They are to be found in India, Indo-China, China, Japan, and the Philippines. Three species have been imported :—

H. psaroides, from the Himalayas, is deep grey with the crown of the head, the base of the beak, and moustache black, the belly whitish, beak and legs bright red. It is sociable, familiar, and noisy. It sucks nectar from the large flowers of rhododendrons.

H. ganeesa, from Southern India and Ceylon, resembles the preceding, but the grey is much darker, almost black.

H. amaurotis, from Japan and East China, has a black beak and legs ; it is grey striated with black, much darker on the back, wings, and tail, with a chestnut band beginning at the eye and descending to the shoulders ; belly, tawny brown.

The Green-winged Bulbul (*Hemixus flavala*) has a square tail

ashy grey above, with the wings and tail edged with yellowish green. The head is ornamented with slender plumes which can be erected into a crest; it is dark grey, lores and cheeks black, ears brownish grey, chin, throat, and the centre of the abdomen are white, the remainder of the under parts pale grey.

This pretty bird inhabits the Himalayas and the mountains to the east of India. It lives in forests in large trees and also on their outskirts. It feeds on fruit. It is brought over occasionally and is easily kept in a cage. A closely allied species (*Iole maclellandi*) has also been imported from these parts. It is olive green above, the crown of the head chestnut brown; grey and white beneath, the ears chestnut, as are also the inferior portions of the body.

The Black-headed Bulbul (*Microtarsus melanocephalus*) is a large bird, brown, tinted with olive green; the head is straw-coloured, the lores and cheeks black. The feathers on top of the head are rough and close. It lives in the Malayan forests.

The Serin Bulbul (*Bleda serina*) is found in the forests of West Africa. Its colour is olive yellow, with a white face, and is brighter yellow on the under parts. The beak is reddish brown.

The Madagascar Bulbul (*Ixocincla madagascariensis*) is greyish brown, lighter underneath, the top of the head furnished with long slender black feathers; beak and legs, yellow. It is common wherever there are trees; it lives on fruit, seeds, and insects.

The Red-vented Bulbuls are very common in their native lands, India and the Far East, frequenting gardens in pairs and uttering their gay notes. They live in trees and eat fruit chiefly. They may be known by their thick crest, covering the whole crown of the head, the brightly coloured vent, and tail tipped with white. They are frequently imported and do well in captivity.

Several kinds of Red-vented Bulbuls (*Molpastes*) have been imported. The common Indian species (*M. pygæus*, *M. hæmorrhous*) arrive most frequently, but sometimes a Chinese species (*M. chrysorrhoides*). They are all very much alike; greyish brown birds about the size of a Lark, every feather tipped with white; black head and throat, the coverts and end of the tail white, the belly whitish, and the vent red. They breed readily in confinement. I have an Albino specimen all white with a red vent.

The Crested Bulbuls (*Olocompsa*) differ from the above in having a very long fine crest on the crown of the head. Their habits are similar.

The White-eared Bulbul (*O. leucotis*) comes from Persia, the N.W., and Central India. It is slightly smaller than the preceding. It has a black head with white ears and cheeks. The body is greyish brown, lighter beneath; the tail black, tipped with white; and the vent bright yellow. It is frequently imported, lives well in an aviary, and has been bred.

The White-cheeked Bulbul (*O. leucogenys*) has the forehead and crest brown, the feathers edged with pale grey. The sides of the head are black with two white spots, surrounded by black on the cheeks and ears; the rest of the plumage is olive brown above, earth colour below; the tail is white-tipped save for the two middle feathers, vent sulphur yellow.

This species inhabits the Western Himalayas and Afghanistan. It has been imported occasionally.

The Red-whiskered Crested Bulbul (*O. emeria*), a native of India, Indo-China, and China, is the most frequently imported of this family. It is very pretty, black-headed, with a white spot on the cheeks and a red one under the eyes extending to the ears; upper parts brown, the lower white; a white-tipped tail, with red vent. It is a first-rate aviary bird and has bred in confinement.

The Black-crested Yellow Bulbul (*O. flaviventris*) has been imported; it is very handsome, entirely yellow shading into olive on the back, with the head and throat black. It is a native of Indo-China and the Malayan Peninsula.

The Bulbuls of the genus *Pycnonotus*, the type of the family, only differ from the preceding in being without crests. They are found in forests and do not frequent gardens. Most of them are dull coloured, but some are very pretty. They all do well in confinement, and some species are much sought after for their song. Many of these species are found in Africa, Asia, the Sunda Islands, and the Philippines; some of them have occasionally been imported. We need only mention the following very dull-plumaged species:—*P. capensis*, from the Cape; *P. layardi*, *P. nigricans*, from S.E. Africa; *P. arsinoe*, from Abyssinia;

P. barbatus, from North Africa; *P. xanthopygus*, from Syria and Palestine; they are all either brown or grey, and more or less black-headed; the vents either yellow or white. Their only interest lies in their song. Some, especially the Syrian Bulbul, imitate other birds and sing very well.

The Yellow-bellied Bulbul (*P. aurigaster*) from Java is brown above, pale grey beneath, with a black head, cheeks and throat white, and the vent yellow.

The Bimaculated Bulbul (*P. bimaculatus*), from Java and Sumatra, is one of the prettiest of the genus. It is olive brown above, the wings barred with yellow, the head dark brown with yellow-tinted cheeks and two bright yellow spots between the beak and eye and above the latter; grey breast, spotted with dark brown; light grey underneath, with a yellow vent. These two species were brought over in 1920 by M. Frost, and have figured in Mme. Lécallier's collection.

The Chinese Bulbul (*P. sinensis*) also is a handsome bird. It is grey with olive green marking above, wings and tail olive green, tawny underneath; the nape brown, likewise the cheeks and ear-coverts, which become white at the back of the black head with a large white crescent on the nape and sides; chin and throat white. It has been imported several times.

The Red-throated Bulbul (*Rubigula gularis*) is a splendid bird from the south-east of India; it is yellowish green above, brilliant yellow underneath, head black, and throat ruby red. It has very rarely been imported.

The Finch-billed Bulbul (*Spizixus canifrons*) differs from all other Bulbuls in having a short, thick, curved beak; it is square-tailed, it has a long, pointed, thick crest, and very short weak feet. It is green with a grey forehead; the crest, a ring round the eyes, the throat, and the end of the tail, black; cheeks grey speckled with dark brown, ear coverts brown, beak and feet yellow. A few specimens have been imported. I have had some which arrived in bad condition and did not live long.

THE CUCKOO-SHRIKES AND MINIVETS

By J. DELACOUR

The birds of the family of the *Campophagidæ* resemble the Shrikes in their appearance. They differ in that the feathers on the lower part of the back have rigid shafts, and their beak is less powerful and less hooked and wider at the base. They are also allied to the Flycatchers: the small species especially resemble these. They are like them in their habits, being purely insectivorous. They are found in Asia, Africa, and Oceania. They mostly have grey plumage with black and white markings, and are rather large, varying in size from a Jay to a Lark. They are usually migratory. They build cup-shaped nests, their eggs are speckled, and the young have streaked plumage. As far as I know, only two genera have been kept in captivity in Europe. They lived on the same food as the small Soft-bills, such as Flycatchers.

The Tri-coloured Cuckoo-shrike or Caterpillar-eater (*Lalage tricolor*), from Australia, has been on view in the Zoölogical Gardens in London and Berlin. It is of medium size; when the male is in breeding plumage he has the top of his head, the back of the neck, and the top of the back black; the lower part of the back is light grey. The wings are black and white, the tail black tipped with white on the outer rectrices; the cheeks, throat, and the upper parts of the body are white; the female, and the male when he is out of colour, are light brown above, pale tawny lightly streaked with black below; the eyebrows cream coloured; the wing-feathers and tail black, bordered tawny rust colour. This bird is a good songster.

The Minivets (*Pericrocotus*) are allied to the Flycatchers. They are magnificent birds, inhabiting India, Malayia, Indo-China, China, Japan, and the Philippines. Generally speaking the sexes are not alike, the males being black and red or yellow, while the females are grey and yellow. Minivets live in little flocks among the trees, hunting insects in the leaves.

Four species of these fine birds have been imported up to now. They require the same treatment as Flycatchers, that is to say, a diet suitable for small Soft-bills.

The Scarlet Minivet (*P. speciosus*) has the breast, the rump, the lower back, all the under parts of the body, part of the wings and the tail bright red; the remainder of the plumage is black.

The female is dark grey above, yellow beneath. This superb bird is about 23 cm. in length, and is a native of the East Himalayas.

The Short-billed Minivet (*P. brevirostris*) is smaller, but much like the above; its beak is shorter and tail longer. The female has an orange-yellow tail and wing markings. It also is found in the Himalayas.

The Small Minivet (*P. peregrinus*), which is found from India to Indo-China and Java, is grey above with the rump red; wings and tail, black and red; throat and sides of the head, black; under parts, orange yellow, scarlet on the breast; female, pale grey, yellowish white underneath; size, small.

The Rosy Minivet (*P. roseus*), from the Himalayas, is greyish brown above; wings and tail, black and red; under parts rosy pink, whitish on the throat; in the female the rosy pink of the male is replaced by pale yellow.

THE FLYCATCHERS

By J. DELACOUR

The numerous family of Flycatchers is made up of small birds, mostly migratory, which may be known by their short, often flat beaks, the presence of numerous hairs springing from the forehead towards the nostrils, and their extremely weak feet. They feed on insects, sometimes also on berries. They prefer to perch on dead boughs or on stakes, etc., whence they take wing to catch insects in the air, returning each time to the same perch.

Flycatchers are extremely graceful, and many of them have fine plumage in which blue predominates. They live well in confinement on small Soft-bill mixture, that is to say, an insectivorous food and living insects, ants' eggs, mealworms, etc. They are best kept in cages.

Flycatchers are found all over the world. A few species inhabit

Europe and America, but they are particularly numerous in Asia, Africa, and Oceania.

Four European and a dozen or so of foreign species have been kept in captivity in Europe.

The Grey Flycatcher (*Muscicapa grisola*) is the grey bird which every one knows in gardens. It arrives in May and leaves us the end of summer. It often builds its nest in espaliers and sometimes chooses the most extraordinary places.

The Black Flycatcher (*M. atricapilla*) lives chiefly in the South of Europe, and is rarer than the preceding. In summer the male is black above, with the wings and tail marked with white; forehead, cheeks, and all the under parts are white in winter, the black and white both greyish. The female is grey, paler underneath, with white in the wings.

The Pied Flycatcher (*M. collaris*) differs from the above in having the white frontal spot much larger, and a large white collar behind the neck. It inhabits Central Europe.

The Ruddy-throated Flycatcher (*Siphia parva*) inhabits South-east Europe, Central Asia, and India. It is like a Robin: brown above, yellowish white below, throat and upper portion of the chest orange red, two blue grey marks on the sides of the head. The female lacks the blue grey on the head and her breast is yellowish red.

Tickell's Blue Flycatcher (*Cyornis tickelliae*) is blue, slightly slate coloured, with black lores and ear-coverts grey blue; throat and breast are bright rust red; the belly is white; the beak rather long and narrow. The female only differs in having rather duller colouring. This Flycatcher is a native of India, Ceylon, the Malayan Peninsula, and Indo-China. It nests in holes in banks and trees. It is a true Flycatcher, feeding on insects which it catches on the wing or on branches. They have been imported occasionally. I have owned several. They have a pleasant song, but they are decidedly delicate.

The Verditer Flycatcher (*Stoparola melanops*) is more often imported although still rarely enough. I have owned it several times. It is found in India, in Malaya, in Indo-China, and China. Its beak is short and rather wide, its colour light sea-blue turning to verdigris, brightest on the head; the lores and round the beak black. The female

is rather duller and is speckled with white on the throat. It is a delightful bird, and once acclimatized lives well in a cage.

The Niltavas (*Niltava*) are remarkable for their glorious plumage, in which bright blue predominates. They frequent thick forest and live on berries as well as insects. They have narrow beaks, the base covered with thick hair. The females are unlike the males, but in both sexes Niltavas may be known by bright blue spots on the side of the neck.

Niltavas live well in confinement; they should be given the same food as Flycatchers and sweet fruit, especially grapes. Three species have been imported, one, *N. sundara*, fairly often; they are among the most beautiful and graceful birds one could possibly have.

The Greater Niltava (*N. grandis*) attains a length of 20 cm. in Indo-China; it inhabits East Himalaya. The male has the top of the head, the rump, the wing-coverts, and a large spot on either side of the neck very bright cobalt blue; the back is violet blue, the flights and the rectrices are black and deep blue. The remainder of the body is dull blue. The female is olive brown above, tawny below, with a blue mark on each side of the neck.

The Rufous-bellied Niltava (*N. sundara*) is smaller (15 cm.). The male has the forehead, lores, the sides of the head, and the throat black; the crown of the head, the nape, the rump, the coverts of the wings and tail brilliant blue, the rest of the upper part of the body deep blue, all underneath is bright red. The female is olive brown, with a white mark on the front of the neck and two blue marks on the sides.

This beautiful bird inhabits Eastern Himalaya, Indo-China, and China.

The Lesser Niltava (*N. macgregoriae*) has recently been imported. It is to be found in the Eastern Himalayas. It only measures 12 cm. The male is entirely blue, most brilliant in the same parts as the preceding. It is black in front of the eyes and round the beak; the cheeks, ears, throat, and breast purple; the under parts ashy grey. The female is olive brown above, yellowish below, with two blue patches on the sides of the neck.

The White-eyebrowed Blue Flycatcher (*Muscicapula superciliaris*)

is smaller than the preceding. It is dull blue above and white below, with white eyebrows and a wide blue collar interrupted in front. The female is olive brown washed with blue. It spends the summer in the Himalayas and the winter in India.

The Japanese Blue Flycatcher (*Cyanoptila bella*) is a fascinating blue bird with the sides of the head, the throat, and breast black, and a white belly. It is to be found in China also, and migrates to Indo-China and Malaya for the winter.

The White-starred Bush Robin (*Pogonocichla stellata*) is the only member of its family which has so far come to us from Africa. It is a small bird, recalling the Redstart in appearance. The sexes are alike. The head and neck are blue grey with a little white spot in front of and above each eye, the back olive green, wings grey blue, the under parts orange-yellow, also the tail, which, however, is edged and tipped with black and the two middle feathers black. It has the curious power of hiding and showing the white spots on its forehead at will, though they are usually visible.

This charming bird inhabits South Africa; it is a forest dweller, frequenting thick bushes, and is very shy. It is altogether insectivorous. To judge by the one I possess, which is the only specimen yet imported and which has been over three years in Europe, first with the Hon. Mrs. Bourke, then with me, it lives well and thrives on the mixture which suits the small Soft-bills.

The Rhipidura or Fantail Flycatchers are very abundant in Oceania; several are also natives of India and the Far East. They may be recognized by their thick beaks, amply furnished with hair at the base, and their large rounded fan-shaped tails.

The Three-coloured Rhipidura or Black and White Fantail (*Rhipidura tricolor*) has been imported from Australia; its body is black with dark brown tail and wings, the eyebrows, very slight moustache, and the belly are white.

The Red-headed Robin (*Miro australis*), from New Zealand, has occasionally figured in European collections. It is black above, marked on wings and tail with white, the throat is black, the breast orange, and the belly yellow.

The Yellow-breasted Shrike Robin (*Eopsaltria australis*) is a big

Shrike-like bird, very common and tame in Australia. It is grey, with yellow under parts, olive back and rump, and a white throat.

The Scarlet-breasted Robin (*Petroica multicolor*) is another Australian bird, black and white, with pinkish red breast. A close relation (*P. phoenicia*), with an orange-red breast, has also been imported.

HOW TO KEEP INSECTIVOROUS BIRDS IN PERFECT CONDITION

By P. F. M. GALLOWAY

In writing articles on our insectivorous species (of which, during the last forty years, I have kept successfully every species that I consider capable of being kept in perfect health and tame, and which have all been of intense interest to me), I trust my remarks will be helpful to those aviculturists who also keep insectivorous birds.

To keep these birds in perfect condition and song has always been my aim, and it has been through observing the birds in their wild state for hours at a time that I have learnt many things that have been a tremendous help to me in keeping them in the condition they should be kept in.

One can learn a good deal from outdoor observation, but one can learn a great deal more when he keeps them as pets, which he could never learn from them in the wild state; and in writing, I shall endeavour to show how I feed, exactly what staple food I use, the various live foods as the seasons come round, the size of cage for each species, the way to moult them, and also the few ailments which all birds—not only in cages or aviaries, but in the wild state—are occasionally subject to, and the way in which these ailments can be absolutely cured.

Now I do not wish for one moment that these articles shall appear as an advertisement for my foods, but if I am to write and show how my own birds have been fed to attain the best results, I shall fearlessly mention exactly how they are fed and on what foods.

THE NIGHTINGALE (*Daulias lusciniæ*)

The Nightingale is not at all a difficult bird to keep in confinement. Either the hand-reared or adult will thrive and sing well ; the adult male will often commence singing when caged only a short time, sometimes within a fortnight ; the young commence to practise their song before they are full-grown, but do not sing a good, full, loud song until the second year.

These birds vary considerably in the quality and length of the passages in their song : some will sing indifferently in cage or aviary ; others will sing grandly, but there are good, bad, and indifferent songsters in the wild state just the same. Some Nightingales make the underwoods echo with long and beautiful notes with hardly a pause between the passages ; others sing poorly and in snatches, and it is not a case of one being a last season's bird and the other, the best songster, being adult.

The Nightingale arrives about the middle of April and commences to sing as soon as it has arrived at its favourite spot, which may be an overgrown double hedgerow with a ditch in the middle, with brambles and rank herbage growing thickly, or they will select the corner of some underwood where the hazel nut bushes flourish, especially where ivy and bunches of nettle abound, or on the edge of a common where thorns, brambles, and the furze grow well, but wherever they have selected they seldom move far from it and then only for a short time, to fight and drive away another cock-bird that has come too near its selected spot. There may be three or four Nightingales in one underwood, but they keep a respectful distance from each other, but if they encroach on the other's preserves there is a row at once and a great chasing in and out of the bushes, singing one against the other as if in defiance all the time until the intruder has gone back to his own spot. This goes on at intervals until the hens arrive and the birds have mated up.

It must not be imagined that all the males find mates and breed ; they do not, and those males that have not found mates are bachelor birds that can be heard singing after the others have practically finished for the season.

The fact is that, in the nests, cocks predominate. I have examined

many nests of young, and have invariably found more cocks than hens, but with species who have two and even three nests of young in the season, the last nests generally contain more hens than cocks.

Referring again to the song of this bird, in the wild state it only sings from about the middle of April until the first week in June, when the young hatch, but in captivity we can beat nature hollow, for it will often sing for many months, even in some cases throughout the year, except during the time occupied by the moult. "Birds in a cage or aviary do not sing because they are unhappy!" If this were so, then how very unhappy they must all be in the wild state, for the song is exactly the same when the bird is kept as a pet as it is in the wild state—not one atom of difference. I have known Nightingales live in perfect health for years in cages and sing well: even up to nine years of age. Goldfinches have lived and thrived over twelve years, infinitely longer than they would ever get a chance of doing in the wild state, for they have too many enemies, and their worst enemy is the weather. It is the latter that has been the chief cause of the scarcity of our common Swallow (*Hirundo rustica*).

The Nightingale builds towards the end of the third week in May. The nest is built of dead oak and other leaves, also the loose dead rind of the wild honeysuckle and dead stalks of the dog's mercury; a lot of leaves are used, and the nest is placed generally on the ground, but sometimes on a stump of a hazel-nut bush, or in a small bunch of nettles. Others I have found three feet from the ground in blackberry brambles, also on a few occasions built up in a hedge beside a wood; it is lined with a few fine roots and a little horsehair, the nest being rather deep. The nest is built with the dead leaves when they are wet, so that when it is completed the whole is firm and practically cemented together.

Many birds build rapidly during and after a shower of rain, even the Thrush builds with wet material, and the lining of wet mud and cow-dung, as soon as dry, is quite firm and looks not unlike the inside of a coconut shell.

The eggs of the Nightingale are different in colour to other small birds, being dark olive green all over, with occasionally a fairly pronounced zone at the larger end of deeper olive brown.

The young are hatched generally during the first week or early part of June, some extra early nests I have found with newly hatched young by the end of May.

When I speak of birds thriving in captivity, I am alluding to those kept by people who take a keen interest in their birds and see that their wants are supplied in regard to food, water, etc., and understand the matter ; and this brings me to the subject of cages.

The cage for a Nightingale should be 2 ft. by 1 ft. 3 in. and 10 in. deep, with a perch at each end, placed from back to front, and one along level with the front rail, so that the bird can fly down to the food and water vessel. The perches arranged at each end of the cage allows the bird to fly from one to the other. Some people put far too many perches in a cage, and the bird simply hops from one to the other.

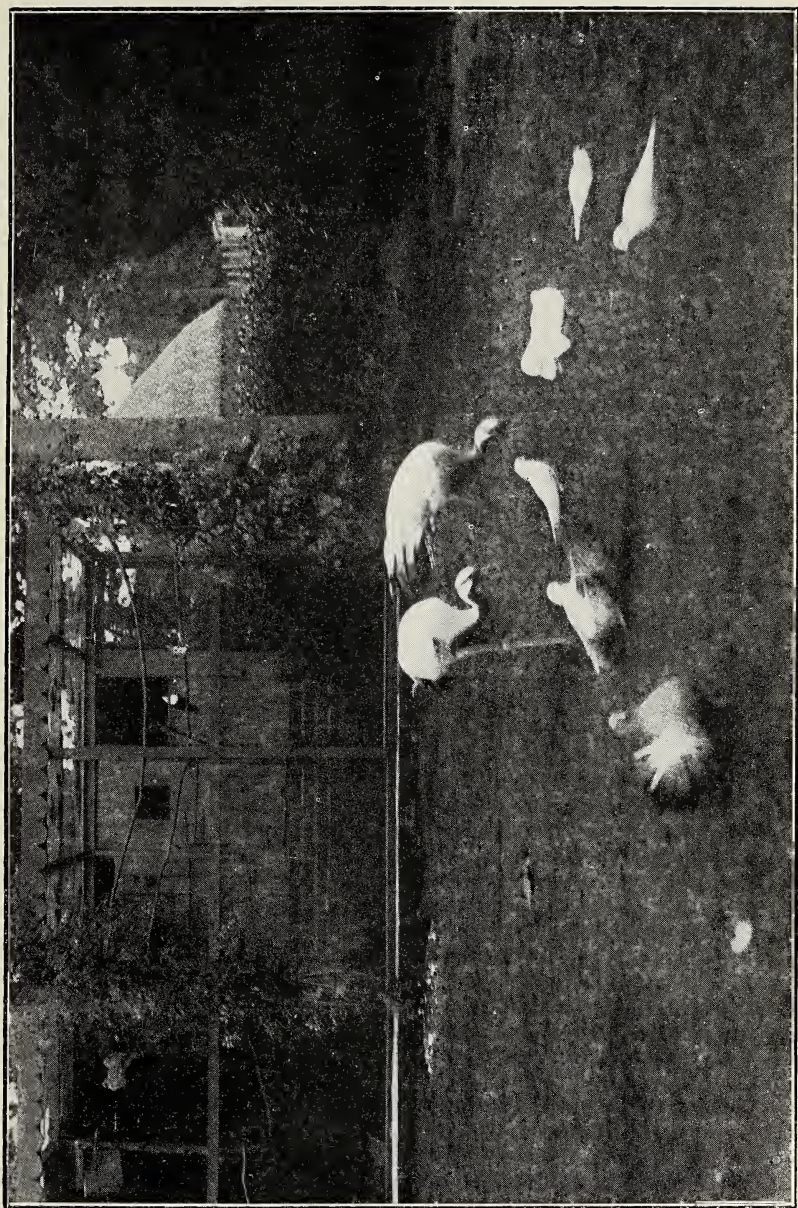
It is not hopping exercise that a bird wants only, but flying exercise. It is like a man having his legs tied but being allowed to move his arms, and therefore not able to take walking exercise. It is far healthier for a bird to be compelled to fly from one perch to the other, than to hop only. Padded perches are quite unnecessary, clean perches absolutely necessary, or birds' feet become sore or swollen. This I shall deal with under the heading of "Ailments of Birds" later on.

(To be continued.)

AVIARY NOTES

By CAPTAIN WAUD

I have my aviaries arranged in one long rectangle, and this I have divided into compartments (each compartment 9 feet long by 3 feet wide). The front faces south-east, and is all wire (wire netting, $\frac{1}{4}$ in. mesh). At the top I have 18 inches of wire in the front, as I find the Parrakeets love to hang on the wire, and let the rain drop on to them ; after they have done this they usually go to their baths and bathe thoroughly. Then for the other part of the roof I have wood and felt, so as to keep the birds dry, and not only keep them dry but give a good shelter from the sun and winds. I find birds require shade as well



A part of Captain Waud's Collection.

[To face p. 16.]



Captain Waud with his Trumpeters.

as sunshine, and by this method I think I have both. I keep chiefly Parrakeets and so cannot have any shrubs in their aviaries, only two perches across, and a few pieces of apple wood hanging on the wire, for them to bite up and amuse themselves with. I always do my best to let them have as much exercise as possible, for that, I think, is the most essential thing to keep them in good health. When the breeding season is over I have a succession of doors (which lead from one aviary to another, all the way along) and these I open and keep so that all through the winter they get a good flight from one end to the other. Of course, I only keep birds together which agree, and Broadtails, I find, will live peacefully together when not wishing to breed. Conures I always have to keep alone, as I find they are most quarrelsome with other Parrakeets.

I must say I have been very careful in the building of the aviaries, as I hope the photographs show. I have the whole rectangle on a foundation of bricks about 18 inches in the ground, and this (so far) I have found quite enough to keep out rats. Mice I cannot keep out, as they creep through the wire when they are very young and never leave; but, with no cover for mice to hide in, I am not worried much; but in aviaries where there is cover—and they are not used for Parrakeets, but for Finches, Quails, etc.—I find mice a fearful nuisance, and am always waging war against them.

This year I have not had much success breeding, as the cold east winds in the spring rendered the Parrakeet eggs unfertile, and when a few eggs happened to hatch the cold, damp weather killed the young birds. I have lost two nests of the Yellow-fronted Conures (which was a great disappointment), both from the weather, I fear. In the last nest I had two young ones, and they were nearly feathered before they died.

Now, in October, I have a nest of Gouldian Finches (three young ones) nearly feathered, a nest of Green Singing Finches (three young ones), but as their nest is in a very exposed place I fear the rain will wash the young out of the nest. The Chinese Painted Quails have laid again (they do every autumn). These, I fear, will do no good, owing to the lateness of the year. I have been trying to get a pair of Barbary Doves to nest, and then I should put the Quail's eggs under them and try to rear in a foster-mother. This, I think, could be managed. I tried the eggs in an incubator last year, but had no success.

My Quails nested in the spring of this year, but, alas! the eggs were eaten by mice.

My Shamahs had three nests this year, but the hen ate the young ones as soon as ever they hatched. This, I think, was due to too stimulating food. The second nest of eggs I placed under a Spotted Fly-catcher, and she brought the young ones up to a good size and then I tried to hand rear, but, alas! I fear I gave them too much food—although I fed chiefly on live insects—and they all died.

I have reared three Ringnecked Parrakeets, all strong, healthy birds, and just over the moult.

I will conclude by only hoping that other aviculturists have had better successes this year than I have had. Last year was a much more interesting time in the aviaries than this—chiefly, I think, due to better climatic conditions. I had an interesting cross between a Bauer and Mealy Rosella. I had four beautiful young birds, two of which I presented to the London Zoological Society. One of my remaining young birds died during the first month; the other I have, and it is a most intelligent bird, an excellent mimic, and extremely handsome. She imitates the call of the cock Painted Quail beautifully. In the spring I am going to try and pair her with an Adelaide Parrakeet cock. Of course, the result may be nil, but one can never tell the result till one tries.

THE NESTING OF THE CINEREOUS TINAMOU (*CRYPTURUS CINEREUS*)

By W. SHORE-BAILY

The Cinereous Tinamou is a bird that enjoys a very extensive range. According to the British Museum Catalogue, it is found from Guiana and Eastern Peru to the Rio Madeira, and Hudson says that it is also found in Northern Argentina and Uruguay. I think that my birds probably came from Guiana, as I got at the same time a specimen of the very rare *Crypturus maconelli*, whose habitat is British Guiana.

C. cinereus is about the same size as our Red-legged Partridge; in colour it is greyish brown, the feathers on the back and upper parts

being prettily edged with brown. The throat and upper breast is dirty white. Legs grey and not yellowish as stated in the British Museum Catalogue. The feathers on crown of head are erectile, and as the under sides are black the bird looks, when excited, to have a black crest. This is a very distinguishing mark.

C. maconelli is a rather smaller bird, and is uniformly plumbeous grey all over, a very unusual form of colouring for this type of bird. Every other Tinamou I have seen has barred plumage on some part of its body. I turned my two pairs of birds into a large summer aviary, where they quickly disappeared into the thick cover. Little was seen or heard of them until towards the end of May, when I heard one of them calling. A search was successful in locating a nest in a thick tuft of grass containing eight nearly black eggs, intensely glossy as are most of the eggs of the Tinamou family. On examining the nest on 15th June, I found that they were on the point of hatching, but the following morning when I went to take the young ones to rear in a foster-mother the nest was empty. A search for the young proved a lengthy business, as they had scattered all over a rather large and densely planted aviary, and every little one was apparently on its own, and independent of its parents. However, in three days we caught six of them, and concluded that the other two must have died. These we reared in a foster-mother, and they did very well, becoming very tame. One we lost, as when the foster-mother was open it became frightened and flew straight up into the air and disappeared. In about a month's time both hens went to nest again, the cocks of course doing the incubating, and one day whilst I was examining one of the nests I flushed a bird which on examination proved to be a half-grown Tinamou, one of the birds that had escaped us earlier in the year. Later on we found a second youngster, and both of these, in spite of the very wet summer, grew into fine birds. Whether the cock parent mothered them at night I am unable to say, but he certainly did not do so when we found them, as he was sitting on eggs. I think that, altogether, both Tinamou hens had three clutches, two of which I removed for my collection. However, late in the season one of the males brought off a troop of four or five young from a nest that I had failed to discover. None survived,

although one at least was alive five or six weeks after I first saw them. In conclusion, I would say that this Tinamou makes quite a nice aviary bird, although it is hardly so steady as the larger Rufous Tinamou. I can find no record of its having been bred in captivity, and it seems to have been very rarely imported.

[Can any reader supply an earlier record of the breeding of this bird ?—ED.]

AVIARY HEATING

I think that the experience of the vast majority of us who have used oil in any way to heat our aviaries is that, sooner or later, we come one morning and find a dense fog and our birds dead. Happily for my birds and myself, my experiments took place in a small greenhouse with only plants to suffer. After scrubbing the place out and repainting the inside I wrote to the gas company to see if they could help me. They put in a small-sized "Daisy" boiler, fitted up the hot-water pipes, ran the gas-pipe 30 feet and through the garden wall, picked up and relaid the path outside, connected up with the main, all for £16 18s. 8d. I find that the gas costs me no more than the oil did, at the price that it was then, two years ago.

The boiler and gas chamber are contained in an oblong iron case, which projects into the greenhouse at the side and only opens in the front outside, avoiding any possibility of gas fumes entering the house. Beyond brushing out the gas chamber about once a week to keep the jets clean, and looking to see if it is burning properly once a day, there is no trouble whatever. If at any time I was forced to use oil again I should use hot-water pipes connected with a boiler and lamp in a separate compartment, and if it smoked no harm would be done to the birds.

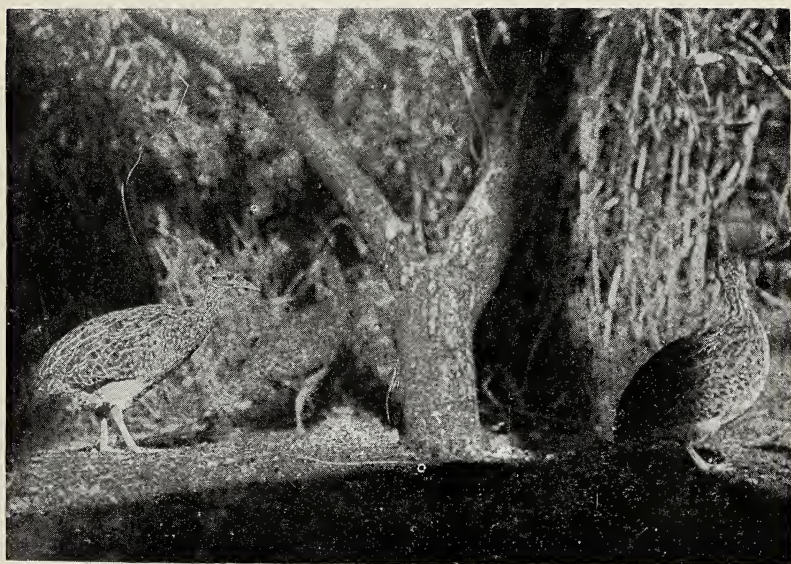
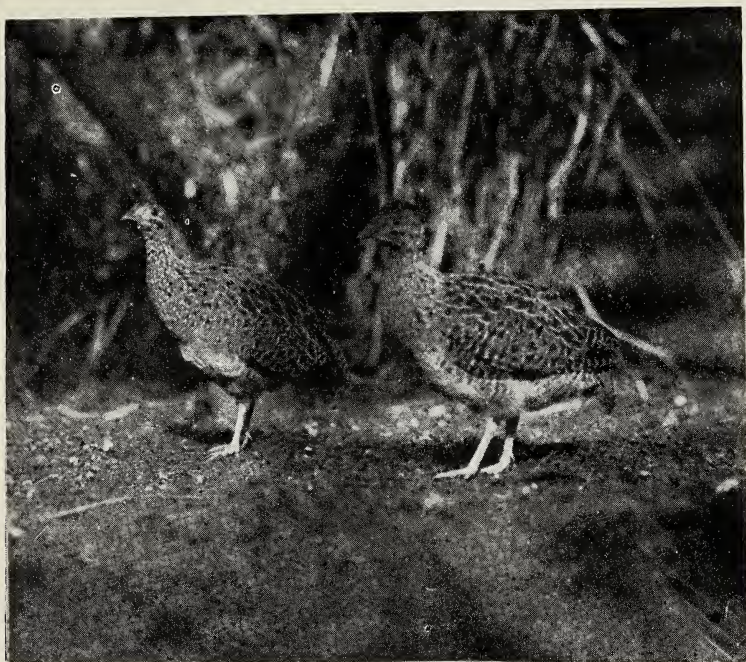
H. L. SICH.

AVICULTURE FROM THE *IBIS*, 1901 TO 1921

(Continued from p. 327)

LARKS

"Larks are popular here as cage-birds, especially the 'Chendool' (*Galerita cristata*) and the 'Agheen' (*mirafra*).



Young Cinereous Tinamous.

[To face p. 20.]

Melanocorypha bimaculata is also brought down . . . in numbers at the close of the cold season, while a few specimens of *M. mongolica* . . . are pretty regularly imported. Another Chinese Lark is often to be noticed—*Alauda gulgula*, I think, at any rate it differs like that bird from *A. arvensis* in its smaller size, shorter wings and tail, and larger feet. These birds are expensive, costing from ten to twenty rupees, although not apparently different from Indian specimens of *A. gulgula*, which I have never seen caged. But the custom of wrapping up the cages has limited my knowledge of Larks to a very great extent." F. Finn. Cage-birds of Calcutta. 1901, 436.

ALAUDA CÆLIVOX. " . . . a very popular song-bird with the Chinese, . . . the market price for a young bird is sixpence . . . The Chinese take these Larks out into the country and placing the cages on the ground . . . one bird will begin to sing, while another . . . will at once commence in rivalry, and so great singing matches are brought about." Vaughan and Jones. Birds of S.E. China. 1913, 177. And cf. Finn *supra*.

MELANOCORYPHA CALANDRA.¹ " . . . the commonest cage-bird in the bazaars, and its song, though shrill, is not unpleasant." Bucknill. Orn. Cyprus. 1910, 15.

M. BIMACULATA, EASTERN CALANDRA LARK. One purchased from a catcher; it had been caught near Lucknow. It became very tame and sang well. Eventually it was killed and eaten by a snake, which got into its cage one night. Jesse. Birds of Lucknow. 1901, 601. (Repeated, 1902, 562.) And see Finn above.

M. MONGOLICA. "Is one of the commonest and most popular cage-birds of the Chinese, as it thrives in captivity and is an indefatigable

¹ "The Pekinese are great bird-fanciers. Like the Mussulman inhabitants of India, with their Partridges and Quails, the Chinese are fond of carrying their birds about out of doors, either in small cages or tethered by a string to a twig. The favourite cage-birds are Calandra Larks, Rubythroats, Blue-throated Robins, Siskins, and a species of Dryonastes . . . The professional bird-catchers . . . take very large numbers of small birds of all kinds, both with small bow-nets of a very simple design, and with bird-lime; many of their captures are sold for cage-birds, and the remainder, no matter how small, are eaten!" Walton, *Birds of Peking*, 1903, 20.

- songster. Its notes, however, are unpleasantly loud and shrill." Walton. Birds of Peking. "Only observed in cages." K. H. Jones. Birds near Wei Hai Wei. 1911, 670. And see Finn above.
- OTOCORYS ALPESTRIS BILOPHA. "Full plumage is obtained in a single moult, as I have found by keeping young birds in cages." M. J. Nicoll. Ornith. Egypt. 1912, 427.
- PYRRHULAUDA FRONTALIS. A cage-full of these seen; probably captured on the Red Sea coast. Butler. Ornith. Egyptian Sudan. 1905, 311.

FINCHES

- CHLORIS SINICA, the most common of imported Fringillidæ. Finn. Cage-birds of Calcutta. 1901, 435.
- EOPHONA MELANURA. "A good many . . . used to be imported, but they were generally subject to a disease of the feet and have not been very popular." Finn, loc. cit. "I only saw this bird in cages, but I was informed that they are caught about Wei Hai Wei. It has to be borne in mind, however, that there is a considerable traffic in cage-birds on the Chinese coast and that they may be transported for considerable distances in junks." K. H. Jones, loc. cit.
- E. PERSONATA. A not uncommon cage-bird. C. Ingram. Ornith. Notes from Japan. 1908, 154.
- E. PERSONATA MAGNIROSTRIS. A tame performing bird seen. La Touche. Birds of N.E. Chihli. 1920, 885.
- COCCOTHAUSTES VULGARIS. "The Common Hawfinch also seen in cages." Ingram, loc. cit.
- C. JAPONICUS. A caged specimen seen, which was said to have been caught near Foochow. C. B. Rickett. Birds of Fohkien. 1903, 216.
- SPERMOPHILA PILEATA. The Eclipse plumage. F. E. Blaauw. 1919, 83. (Observed in captivity.)
- CARDINALS (*Cardinalis virginianus* and *Paroaria cucullata*) have been imported and "have done well, but have not sold very readily." Finn, loc. cit.
- CHAFFINCH. A yellow variety bought by Blaauw at a bird-dealer's in Holland. 1904, 305.

BRAMBLING. To be occasionally seen in Calcutta. Finn, loc. cit.

GOLDFINCH. "The European Goldfinch is generally to be found . . . it does not feel the heat at all, nor does it gasp, as many native birds do." Finn, loc. cit. Many of the Arabs keep cage-birds, the African Goldfinch (*C. carduelis africana*) being evidently the favourite. D. A. Bannerman. Tunisia and Algeria. 1921, 395.

CARDUELIS CANICEPS. Sometimes on sale. Finn, loc. cit.

SISKIN. "The Chinese bird-fanciers keep large numbers." Walton. Birds of Peking. 1903, 27.

HYPACANTHIS SPINOIDES. Fairly commonly on sale. Finn, loc. cit.

LINOTA RUFOSTRIGATA. Tibetan Twite "is a common cage-bird at Lhasa". Walton. Birds of Tibet. 1906, 227.

ACANTHIS FRINGILLIROSTRIS. A few specimens seen. Finn, loc. cit.

ERYTHROSPIZA GITHAGINEA, DESERT BULLFINCH. "I have a live specimen which I succeeded in crossing with a hen Canary, the offspring being in shape and colour like the cock bird; in size, however, they are markedly less." G. Despott. Ornith. Malta. 1917, 303.

GYMNORHIS FLAVICOLLIS, YELLOW-THROATED SPARROW. "A specimen . . . lived for nearly two years in my possession and it showed a marked seasonal change of plumage." Despott, loc. cit. 306. "Sometimes on sale." Finn, loc. cit.

SPARROWS. Both Russet and Tree-sparrows are sometimes seen crowded together in the bamboo cages of the Hong-Kong bird shops. Vaughan and Jones, loc. cit. 1913, 169.

The CANARY, of course, is a very common cage-bird. Most come from China; their note is very soft and pleasant and they resemble the German type of bird. Maltese and a few English Canaries are imported, the latter fetching three or four times the price of the Chinese birds. Finn, loc. cit. "100,000 'Harz-Canaries' through one dealer's hands in one year." In Notice, 1908, 619.

SERINUS ICTERUS. "A common cage-bird in Mauritius. Originally imported by the French in the eighteenth century . . . one of the most pernicious presents ever made . . ." Meinertzhagen. Birds of Mauritius. 1912, 90. A Serinus (probably *icterus*) not uncommon in the bird market. Finn, loc. cit.

METOPONIA PUSILLA. A few seen. Finn, loc. cit.

CARPODACUS ERYTHRINUS. "The 'Tuti' is commonly kept as a songster. It loses the red colour after moulting in confinement, like other carmine-tinted Finches." Finn, loc. cit.

C. LÆTISSIMUS. "The Tibetans had a few cage-birds of this species at Lhasa." Walton, loc. cit. 1906, 227.

CROSSBILL. "The bird-fanciers had a few (probably *Loxia japonica*) in the early spring. They asked such high prices for them that I think they must either be very rare or else brought from some distance." Walton, loc. cit. 1903, 27.

BULLFINCH. May occasionally be had. Finn, loc. cit.

EMBERIZA PUSILLA. A little Bunting was caught in October, 1902, near Rugby. It lived in a cage till the end of 1903. O. V. Aplin. 1904, 307.

E. CIA. A Meadow Bunting was captured alive in Kent about 14th February, 1905 (third occurrence in G.B.). It passed into the possession of Mr. G. E. Weston. 1905, 291. Some kept. Despott. Ornith. Malta. 1917, 308.

E. AUREOLA. Sometimes on sale (Calcutta). Finn, loc. cit. Caught in vast numbers (to be eaten). Vaughan and Jones, loc. cit. Some kept. Despott, loc. cit. "Has a sweet song and stands captivity well." La Touche. Birds of N.E. Chihli. 1920, 893.

E. MELANOCEPHALA and E. LUTEOLA. Sometimes on sale. Finn, loc. cit.

E. ELEGANS. "A few brought me by a bird-catcher at the end of May." Walton. Birds of Peking. 1903, 28.

E. SULPHURATA. "Possesses a very fair song somewhat like that of a Linnet, and on this account is not infrequently kept in cages by the Japanese." C. Ingram. Ornith. Notes from Japan. 1908, 157.

FRINGILLARIA IMPETUANI. "Does fairly well in confinement, but seems to be drinking nearly all day." Seimund and Grant, Deelfontein. 1904, 356.

MELOPHUS MELANICTERUS. Sometimes on sale. Finn, loc. cit. The Lucknow catchers usually have one or two pairs in their cages. Jesse. Birds of Lucknow. 1902, 559.

WEAVERS

- PYROMELANA FRANCISCANA.** "In 1903 I reared seven of these birds from the nest, taking them very young and feeding them on crushed millet-seed mixed with water. They became charmingly tame, flying on to my arm when the cage was opened, and all scuffling head downwards into the tin of grain I carried for them. The males assumed the red plumage in the following October, when eight months old, but the first scarlet livery was very much paler and duller than that of older birds." A. L. Butler. Ornith. Egyptian Sudan. 1905, 318. (A first-hand observation and on birds of known age.—E. H.)
- P. ORYX.** The assumption of the Summer Plumage. A. G. Butler. 1916, 476.
- LAGONOSTICTA BRUNNEICEPS** "makes a charming aviary bird and is from the first lively, fearless, and apparently happy in captivity." A. L. Butler, loc. cit. 1905, 320.
- STICTOSPIZA FORMOSA.** Sometimes come into the market. Finn, loc. cit. "The Green Munias are not common, but a few are generally to be found in the 'chirri-mars' cages." Jesse. Birds of Lucknow. 1902, 557.
- TÆNIOPYGIA CASTANOTIS** are among the commonest of the small exotic *Ploceidæ* imported. Finn, loc. cit.
- AVADAVAT.** Common. Finn, loc. cit. "Is captured—as indeed are all Munias—by trap-cages. The males are sold for fighting, a pastime in which the Mohammedans take great delight." Jesse, loc. cit.
- MUNIA ATRICAPILLA.** Common. Finn, loc. cit.
- M. MALACCA.** Less often seen. "Intermediate forms between *M. malacca* and *M. atricapilla* often occur and are doubtless hybrids." Finn, loc. cit.
- M. MAJA** and **M. CASTANEITHORAX.** Commonly imported. Finn, loc. cit.
- UROLONCHA PUNCTULATA.** Ditto.
- U. STRIATA.** Less often. Finn, loc. cit.
- U. ACUTICAUDA.** Wild specimens rarely seen, but the domesticated Japanese race (the 'Bengalee') is constantly present, as are White Java Sparrows. Finn, loc. cit.

AIDEMOSYNE MALABARICA. Common. Finn, loc. cit.

A. MODESTA. Sometimes imported. Finn, loc. cit.

PŒPHILA GOULDIÆ and P. MIRABILIS. Imported to Calcutta. Finn, loc. cit. One lived six years. Melanochroism. A. G. Butler. 1902, 675.

P. CINCTA and P. ACUTICAUDA. Also imported. Finn, loc. cit.

ERYTHRURA PRASINA is imported but does not usually do well.

(To be continued.)

REVIEW

We have received from an Indian member, Mr. Satya Charan Law, a copy of the first volume of his book, *Pet Birds of Bengal*. This volume deals chiefly with insectivorous birds, some of which are well known in England, while others are rarely imported. Mr. Law's book is as interesting from an avicultural point of view as it is accurate from a scientific one, and we look forward with pleasure to the appearance of Vol. II.

CORRESPONDENCE

THE AIM OF KINGFISHERS AND OTHER REMARKS

SIR,—In the AVICULTURAL MAGAZINE for 1923 there is, on page 277, an article headed "Fearlessness of Kingfishers", by Katherine Currey, in which that writer, referring to birds in Surrey, quotes the words of another observer—"never misses prey."

Whether such a dogmatic statement would hold true if applied to the species in various parts of Britain and Ireland seems to me exceedingly doubtful—even if full-grown birds *only* are included—they being presumably more experienced and skilful fishers than part-grown ones.

Certainly such a statement would not hold true if applied to the larger bird known as the Brown-headed Stork-billed Kingfisher of India, *Pelargopsis gurial*, judging by the doings of a healthy adult which lived several years ago, about 1902 or 1903, in the Western Aviary of the London Gardens, and which was often watched by me, there being an account of it in a notebook of mine. This bird was

a large one, being about 14 inches in total length with stretch of wing about 6 inches, and used to sit on a perch before feeding and make successive rapid rushes through the air towards the pond in which fish were put for it, always returning to the same perch to crack a fish on the head after catching one in its large beak.

Possibly the large species of the group which live almost exclusively on fish (called *Alcedininae* by the late R. Bowdler Sharpe) offer more resistance to the air, during their rapid flight towards the fish they are trying at the moment to catch, than do the small species such as the British one *Alcedo ispida*, only about seven inches long; and so a large bird cannot aim so accurately with its beak as a small bird can. But be that view as it may, the fact remains that the above large Indian bird often missed its aim at a fish (especially when the first few were caught and eaten, and the remaining fish swam hurriedly about to try and escape).

An acquaintance I met in the Gardens about five years ago, also told me he had often seen wild birds of this species miss prey in India, thus confirming my observations. The above was, without exception, the prettiest Kingfisher yet seen alive by me, whether of this group or of the mostly insect and reptile-eating group, the *Daceloninae*, and the colour of it recorded as "large red beak, head chocolate brown, breast and abdomen yellow with yellow collar round neck, red feet, back wings, tail, are blue." In Museum specimens the latter are given as greenish-blue (*R. Nat. Hist.*, vol. iv, p. 71); but comparison of the live bird with Museum skins shows these fade to some extent after death, which has been referred to by me before in the AVICULTURAL MAGAZINE for 1923.

I may add that the acquaintance mentioned also told me he had seen this species eat a nestling of another kind of bird, after uttering loud cries, much like the scene recorded in *R. Nat. Hist.* above mentioned as seen by Mr. Stuart Baker.

FREDERICK D. WELCH.

BREEDING OF THE PIGMY DOVE, ETC.

SIR,—*Re* the note in the October number (p. 252) as to earlier records of the breeding of the Pigmy Dove (*Chamæpelis minuta* L.), there are records.

First breeder in the United Kingdom, Teschemaker, 1908. Avic. Soc. Medal. Two young were reared, and a second nest followed from which two more were reared. (See *A.M.*, 1908, 257, and *B.N.*, vii, 120; viii, 190.) The specific name used in the accounts was 'griseola', a synonym. The species has also been bred elsewhere, i.e. by Poltimore, who reared six. (See *B.N.*, 1914, 50.)

I know of no previous record of the breeding of the Olivaceous Thrush or of the Yellow-backed Whydah recorded by Shore-Baily on pp. 255 and 256. The breeding of the Lesser Sulphur-crested Cockatoo will also, I think, be a "first" if the young are fully reared. Perhaps the breeder will let us know where the breeding took place and the date. The cross Roseate Cockatoo and Lesser Sulphur-crested Cockatoo is one recorded: Mrs. Lee, 1917. (See *B.N.*, 1917, 204, 232.)

E. H.

OBITUARY

MRS. DALTON-BURGESS

It is with very deep regret that we announce the death of Mrs. Dalton-Burgess, of Clifton, which took place in December. Though a comparatively new recruit to Aviculture, Mrs. Dalton-Burgess was extremely keen, and possessed a really wonderful collection, accounts of her birds having frequently appeared in the Magazine. The accommodation available at St. John's Road hardly did justice to many rare and beautiful species and to the personal care of their owner in attending to their wants, and, sad to say, at the time of her death, Mrs. Dalton-Burgess was in the middle of constructing a fine range of aviaries at her country house which should have ensured many interesting breeding successes.

Mrs. Dalton-Burgess was a frequent contributor of articles to the Magazine and had made a generous promise of coloured plates. The Editor and her other friends in the Society will never forget her kindness in giving, or lending, rare and valuable birds. She was particularly successful in breeding blue Budgerigars of various shades and her stock was always of fine size and colour.

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FOR THE STUDY OF
FOREIGN & BRITISH BIRDS
IN FREEDOM & CAPTIVITY

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List of Members

1st JANUARY, 1925

NOTICE.—*Members are particularly requested to inform the Hon. Secretary of any error in the spelling of their names, addresses, or descriptions, so that it may be corrected.*

The date following the Member's name is the date of his election. "Orig. Mem." signifies that the Member joined the Society on its formation in October, 1894. The asterisk denotes that the Member pays the subscription through a bank.

Members are requested to adopt this method of payment if convenient.

ABBOTT, CHARLES H. ; 300 Fifth Avenue, at Thirty-first Street, New York City, U.S.A. (April, 1924.)

*ALLENBY, FIELD-MARSHAL THE VISCOUNT, G.C.B., G.C.M.G. ; the Residency, Cairo, and Naval and Military Club, Pall Mall, S.W. (Nov., 1922.)

AMERICAN MUSEUM OF NATURAL HISTORY ; 77th Street and Central Park West, New York City, U.S.A.

AMSLER, MAURICE, M.B., F.Z.S. ; Eton Court House, Eton, Windsor. (Dec., 1908.)

ANDERSON, ALISTAIR ; Tullichewan Castle, near Balloch, Dumbartonshire. (June, 1923.)

APPLEBY, JOSEPH ; Farnley, Great Crosby, Liverpool. (Oct., 1923.)

ARNOLD, R. ; Tower House, Leigham Court Road, Streatham, London, S.W. (Jan., 1925.)

*ASTLEY, HUBERT DELAVAL, M.A., F.Z.S., M.B.O.U. ; Brinsop Court, Hereford. (June, 1895.) (*President.*)

*ASTLEY, MRS. HUBERT ; Brinsop Court, Hereford.

ATKINSON, Capt. F. B. ; Gallowhill, Morpeth, Northumberland. (Jan., 1925.)

*BAILY, W. SHORE ; Boyers House, Westbury, Wilts. (Feb., 1910.)

BAINBRIDGE, Capt. W. A. ; Stanhope Castle, R.S.O., Co. Durham. (Jan., 1925.)

*BAKER, E. C. STUART, F.Z.S., M.B.O.U. ; 6 Harold Road, Upper Norwood, S.E. 19. (Feb., 1904.)

*BALDELLI, La Contessa GIULIA TOMMASI ; 4 Via Silvio Pellico, Florence, Italy. (April, 1902.)

BAMFORD, WILLIAM ; Bridgecroft, Kent Road, Harrogate. (March, 1904.)

- BARKER, Major C. H. ; The Gables, Lyminge, Kent. (Jan., 1925.)
- BARLOW-MASSICKS, Miss F. M. ; The Friary, Tickhill, Yorks. (1913.)
- *BARNARD, T., M.C., F.Z.S. ; Duncote Hall, Towcester. (Sept., 1919.)
- BARNES, A. H. ; 59 Oakhill Road, East Putney, London, S.W. 15. (Jan., 1925.)
- BATH, Marchioness of ; Longleat, Warminster. (Jan., 1925.)
- BEARBY, W. R. ; 34 Church Street, West Hartlepool. (Aug., 1923.)
- BEDFORD, Her Grace the Duchess of, F.Z.S. ; Woburn Abbey, Woburn, Beds ; and 15 Belgrave Square, S.W. 1. (Feb., 1903.) (*Vice-President.*)
- BEEBE, C. W. ; Curator of Ornithology, New York Zoological Park, New York City, U.S.A. (Jan., 1925.)
- BEEVER, G. ; Brooklyn, Kirkheaton, Huddersfield. (June, 1923.)
- BERESFORD WEBB, G. M. ; Norbryght, South Godstone, Surrey. (May, 1906.)
- BEST, CYRIL ; Pye Bridge, Alfreton, Derbyshire. (Jan., 1925.)
- BLAAUW, F. E., C.M.Z.S., M.B.O.U. ; Gooilust, 's Graveland, Hilversum, Holland. (Nov., 1901.)
- BLACKBURN, H. R. ; Woodlands, Surrenden Road, Preston, Brighton. (1913.)
- BLACKBURN, Miss O. ; Rock End, Torquay, S. Devon. (Jan., 1925.)
- *BOOSEY, E. J. ; The Cedars, Bromley Common, Kent. (Jan., 1925.)
- BOURKE, Hon. Mrs. ALGERNON ; 75 Gloucester Place, Portman Square, W. 1. (Feb., 1911.)
- BREITENBACH, J. M. ; 35 E. 84th Street, New York, N.Y., U.S.A. (Jan., 1925.)
- BRIGHT, HERBERT ; Woolton Tower, Woolton, near Liverpool. (June, 1914.)
- BROWN, W. FERRIER ; 57 Barras Lane, Coventry. (May, 1924.)
- BROWNING, WILLIAM H. ; 16 Cooper Square, New York City, U.S.A. (March, 1906.)
- BRUNTON, J. W. ; Inveresk Lodge, Musselburgh. (June, 1923.)
- BRYANT, HORACE H. ; Melrose, Boynden Road, Maidenhead. (Feb., 1924.)
- BUSHBY, DUDLEY C. ; Triunfo, 5, Alicante, Spain.
- BUTLER, ARTHUR G., Ph.D., F.L.S., F.Z.S., M.B.O.U. ; 124 Beckenham Road, Beckenham, Kent. (Orig. Mem.)
- BUTLER, ARTHUR LARCHIN, M.Aust.O.U. ; 126 Collins Street, Hobart, Tasmania. (July, 1905.)
- BÜTTIKOFFER, Dr. J., C.M.Z.S., M.B.O.U. ; Hallnylstrasse 32, Berne, Switzerland. (Oct., 1907.) (*Hon. Mem.*)
- CALVOCORESÌ, P. J. ; Holme Hay, Croxteth Drive, Liverpool. (Jan., 1925.)
- CAMPBELL, Mrs. J. P. ; 16 Arney Road, Remuera, Auckland, New Zealand. (May, 1924.)
- CAPERN, F. ; Lewin's Mead, Bristol. (Jan., 1925.)
- CARLISLE, J. F. ; Heather Mount, Camberley, Surrey. (April, 1924.)
- *CARPENTER, The Hon. Mrs. ; 9 Hay Hill, Berkeley Square, W. 1. (Feb., 1898.)

- CARR, PERCY ; Ormond Lodge, Newbold-on-Stour, Stratford-on-Avon. (Jan., 1925.)
- CARRICK, GEORGE ; 13 King's Terrace, Maryhill, Glasgow. (March, 1898.)
- CARR-WALKER, HERBERT ; Pannal Hall, Pannal, near Harrogate. (June, 1917.)
- CASE, MRS. ALICE M. ; Holmbury, Silverdale Road, Eastbourne. (May, 1918.)
- *CHAPLIN, E. W. ; The Firs, Great Amwell, Ware, Herts. (Jan., 1925.)
- CHAPMAN, G. B., F.Z.S. ; 17 Tottenham Court Road, London, W. (Nov., 1922.)
- *CHATTERTON, MRS. TALODI ; 3 King's End Avenue, Ruislip, Middlesex. (Jan., 1925.)
- CHAWNER, Miss ; Forest Bank, Lyndhurst, Hants. (July, 1899.)
- CHILD, F. R. ; Braemar, Down's Road, Luton, Peds. (Jan., 1925.)
- CHRISTIE, MRS. G. ; Kellas, By Elgin. (Jan., 1925.)
- COCKELL, N. F. ; Karragreen, Cricket Field Road, Torquay. (1922.)
- COLE, A. J. ; Newcastle Street, Jatala, South Australia. (April, 1924.)
- CONNELL, MRS. KNATCHBULL ; The Orchard, Brockenhurst, Hants. (Nov., 1897.)
- COOK, MRS. A. M., F.Z.S. ; 5 Lancaster Road, Hampstead, London, N.W. 3. (Jan., 1925.)
- COOPER, JAMES ; Killerby Hall, Scarborough. (Orig. Mem.)
- CORY, REGINALD R. ; Duffryn, near Cardiff. (August, 1905.)
- CORDIER, Mons. C. ; Werdgugt 7, Zurich, Switzerland. (Jan., 1925.)
- COTTRILL, MRS. H. L. ; Seven Barrows, Lambourn, Berks. (April, 1924.)
- CROSSE, Miss D. G., F.Z.S. ; Roseneath, Woodside Avenue, Muswell Hill, N. 10. (May, 1924.)
- CUNNINGTON, MRS. H. J. ; Queenborough, Braintree. (April, 1923.)
- CURREY, MRS. ; The Pit House, Ewell, Surrey. (Feb., 1906.)
- CURRIE, J. ; 54 Netherby Road, Edinburgh. (Jan., 1925.)
- CZARNIKOW, HORACE ; Hollington House, Newbury. (March, 1924.)
- DAVISON, JOHN GARFIELD ; 3117 W. Penn Street, Germantown, Pa., U.S.A. (April, 1924.)
- DAWSON, W. LEON ; Museum of Comparative Oology, Santa Barbara, Cal., U.S.A. (Oct., 1919.)
- DEACON, Miss L. ; The Springs, Wormley, Herts. (Sept., 1922.)
- DECOUX, A. ; G ry-pr s Aix, Hte. Vienne, France. (April, 1917.)
- DELACOUR, Lieut. JEAN ; Cl res, Seine Inf., France. (April, 1916.)
- DELL, CHARLES ; 9 Greenhill Road, Harrow, Middlesex. (July, 1900.)
- DENLEY, CHARLES F. ; Rockville, Md., U.S.A. (Jan., 1924.)
- DENNIS, MRS. CYRIL ; Oakley Hall, Market Drayton, Salop. (Jan., 1925.)
- DENNIS, MRS. H. E. ; Lisle Court, Wootton Bridge, Isle of Wight. (March, 1903.)

- DENNY, Mrs. HENRY, C.B.E., Staplefield Place, Staplefield, Sussex. (May, 1924.)
- DICKINSON, Mrs. G. W. ; The Bridges, Upper Slaughter, Gloucester. (Jan., 1925.)
- DIRECTOR, THE ; Zoological Museum, Tring, Herts. (1912.)
- DONALD, C. H. ; Egerton Hall, Dharmasala Cantt., Kangra District, Punjab, India. (March, 1906.)
- DOOLY, THOMAS L. S. ; Boyne Lodge, Formby, near Liverpool. (Jan., 1925.)
- DRAKE, G. TYRWHITT ; Cobtree Manor, Maidstone. (June, 1918.)
- *DREWITT, FREDERIC DAWTREY, M.A., M.D., F.R.C.P., F.Z.S. ; 14 Palace Gardens Terrace, Kensington, W. 8. (May, 1903.)
- DUNLEATH, The Lady ; Ballywalter Park, Ballywalter, Co. Down, Ireland. (August, 1897.)
- DUNMORE, OSCAR E. ; 23 Alexandra Road, Leicester. (Oct., 1922.)
- EDWARDS, Mrs. A. E. ; Drayton Cottage, Ruislip, Middlesex. (Jan., 1925.)
- ELLIOT, Mrs. C. FOGG ; Staindrop, Darlington. (Jan., 1925.)
- EMBLETON, Miss ; Holmhurst, Bishop's Down, Tunbridge Wells. (Jan., 1925.)
- ENRIQUEZ, Major C. M. ; c/o Messrs. Thomas Cook & Son, Rangoon. (1921.)
- *EZRA, ALFRED, O.B.E. ; Foxwarren Park, Cobham, Surrey. (1912.)
- *EZRA, DAVID ; 3 Kyd Street, Calcutta. (June, 1912.)
- FASEY, WILLIAM R. ; The Oaks, Holly Bush Hill, Snaresbrook, E. 11. (May, 1902.)
- FILLMER, H. R. ; Brendon, 22 Harrington Road, Brighton. (Jan., 1925.)
- FINN, FRANK, B.A. ; c/o Grindley & Co., 54 Parliament Street, S.W. 1. (*Hon. Mem.*)
- FROST, WILFRED ; 6 Ward's Avenue, Fulham, S.W. 6. (July, 1908.)
- GARCKE, Mrs. C. ; Wye Lodge, Maidenhead. (Jan., 1925.)
- GHIGI, il Prof. ALLESSANDRO ; Via d'Azeglio, Bologna, Italy. (Mar., 1911.)
- GIBBINS, WILLIAM B. ; Ettington, near Stratford-on-Avon. (June, 1895.)
- GODDARD, H. E. ; Birchcroft, Fetcham, near Leatherhead. (Feb., 1899.)
- GODDARD, Mrs. ; The Lawn, Swindon. (Feb., 1923.)
- GOODWIN, T. J. ; 185 Old Kent Road, London, S.E. (Jan., 1925.)
- *GOSSE, PHILIP, M.R.C.S., L.R.C.P. ; Savile Club, Piccadilly, W. (April, 1911.)
- GOSSE, Mrs. JAMES ; 9 Park Terrace, Park Side, South Australia. (July, 1923.)
- *GRAY, HENRY, M.R.C.V.S. ; 1 Redfield Lane, Earls Court Road, S.W. 5. (June, 1906.)
- GREENWOOD, Mrs. B. ; Blencow, Maidstone. (Jan., 1924.)
- GREGORY, Mrs. ; Melville, Parkstone, Dorset. (Dec., 1901.)
- GREY, The Viscount, of Fallodon, K.G. ; Fallodon, Lesbury, Northumberland. (1913.)

- GRIFFITHS, M. E. ; Caizley House, Temple Road, Stowmarket. (May, 1902.)
- GROSSMITH, Mrs. J. L. ; The Grange, Bickley, Kent. (Jan., 1923.)
- GROVE, Hon. Mrs. JULIAN ; 57 Tregunter Road, London, S.W. 10. (Jan., 1925.)
- GUILFORD, Miss H. ; 23 Lenton Avenue, The Park, Nottingham. (Mar., 1903.)
- GULBENKIAN, C. S. ; 27 Quai d'Orsay, Paris. (Dec., 1908.)
- *GURNEY, G. H. ; Keswick Hall, Norwich.
-
- HAAGNER, A. K., F.Z.S., M.B.O.U., Director National Zoological Gardens ; Box 754, Pretoria, South Africa. (Nov., 1905.)
- HAILEYBURY COLLEGE NATURAL SCIENCE SOCIETY ; Haileybury College, Herts. (Dec., 1922.)
- *HAMILTON, Mrs. ; Villa Alexandra, Chernex sur Montreux, Switzerland.
- HAND, Miss R. ; Bruncombe, Boar's Hill, Oxford. (Jan., 1925.)
- HANKEY, ALGERNON A. ; 71 Lissenden Mansions, Highgate Road, N.W. 5. (June, 1923.)
- HARBORD, Miss M. L. ; Lorton Park House, Lorton, Cockermouth. (Jan., 1925.)
- HARDY, Rev. THOMAS (Missions to Scamen) ; Casilla, 1380 Valparaíso, Chili. (Jan., 1925.)
- HARGREAVES, Miss MOLLY ; Nazeing Park, Essex. (Nov., 1922.)
- HARMON, Dr. BYRON M. ; Essex Co. Sanatorium, Verona, N.Y., U.S.A. (Dec., 1924.)
- HARPER, EDMUND WILLIAM, F.Z.S., M.B.O.U. ; c/o Messrs. Smith, Stanistreet and Co., Ltd., Post Box No. 172, Calcutta, India. (Feb., 1901.)
- HARRIS, CHARLES, F.Z.S. ; 127 King's Cross Road, London, W.C. (Jan., 1925.)
- HARRISON, ION B. ; 8 Gordon Street, Glasgow. (May, 1923.)
- HARRISON, T. O. ; 127 Hastings Road, Sunderland. (Jan., 1925.)
- HARTLEY, Mrs. ; Lynchfield, Bishops Lydeard, Somerset. (April, 1897.)
- *HARVEY, The Hon. Lady ; Langley Park, Slough, Bucks. (Oct., 1906.)
- HAWKINS, L. W. ; 20 Norton Folgate, London, E. 1. (June, 1924.)
- HAYLEY, J. NEWTON. Colne Lodge, Cromer. (March, 1924.)
- HEBB, THOMAS ; Brooklea, The Downs, Luton, Beds. (April, 1914.)
- HENSTOCK, J. H. ; Market Place, Ashbourne, Derbyshire. (Jan., 1925.)
- HERRERA, EMILIO ; 110 W. 88th Street, New York, N.Y., U.S.A. (June, 1924.)
- HEUMANN, G. A. ; Ramona, Bucroft, Sydney, N.S.W. (Sept., 1913.)
- HEWITT, HARALD, F.Z.S. ; East Sooke, Vancouver Island, B.C. (Jan., 1905.)
- HEWITT, T. W. G. ; The Old Hall, Weelsby, Grimsby. (Jan., 1925.)
- HEYWOOD, RICHARD ; Narborough, Norfolk. (Oct., 1911.)
- HINCKS, Miss E. M. ; The Cottage, Winsford, Dulverton.
- HINKS, Mrs. ARTHUR ; 1 Percy Villas, Campden Hill, W. 8. (April, 1923.)
- HIRST, ALBERT ; Broom Field, Longwood, Huddersfield. (July, 1923.)
- *HOLLAS, Mrs. K. E. ; Orta, Stuart Road, Preston. (Jan., 1925.)

- HOOD, HARRY S. ; Keith Theatre Building, Philadelphia, Pa., U.S.A. (April, 1925.)
- *HOPKINSON, EMILIUS, M.A., M.B.Oxon., D.S.O. ; Bathurst, Gambia, West Africa. (Oct., 1906.)
- *HOPSON, FRED C. ; 65 Northbrook Street, Newbury. (March, 1897.)
- *HORSBRUGH, C. B. ; Blessington House, Hillsborough, Co. Down.
HORSFORD, D. M. ; Bosvathic Penryn, Cornwall. (Jan., 1925.)
- HOUSDEN, JAMES B. ; Brooklyn, 31 Cator Road, Sydenham, S.E. 26. (Orig. Mem.)
- HOUSLEY, Miss E. ; Rockley House, near Retford.
- HOWARD, ROBERT JAMES, M.B.O.U. ; Shear Bank, Blackburn. (April, 1903.)
- *HUTCHINSON, Miss ALICE ; Alderton, Chippenham, Wilts. (Aug., 1907.)
- INGLEFIELD, Mrs. [R. R. C.] ; 27 Cadogan Square, S.W. 1. (Jan., 1924.)
- *INGRAM, Capt. COLLINGWOOD ; The Bungalow, Westgate-on-Sea. (Oct., 1905.)
- JACKSON, Major A. E. BLYTHE ; Glenholme, Bladon Muir, Belfast. (Sept., 1925.)
- JENNISON, GEORGE, M.A. ; Zoological Gardens, Belle Vue, Manchester. (April, 1918.)
- JOHNSON, Miss I. STURTON ; Orotava House, Ore, Hastings. (Jan., 1925.)
- JOHNSTONE, Mrs. ; Burtswood, Groombridge, Sussex.
- KEATOR, BEVERLY ; Hartsdale, N.Y., U.S.A. (June, 1924.)
- KENNEDY, Mrs. T. E. ; 36a Penywern Road, Earl's Court, London, S.W. (Jan., 1925.)
- KERSHAW, Miss MARY E. ; 7 Westcliffe Road, Birkdale, Southport. (June, 1924.)
- KEWLEY, Mrs. M. A. ; Barwick House, Yeovil, Somerset. (Jan., 1925.)
- KINKAD, GEORGE W. ; 9 Donegal Square, S. Belfast. (June, 1924.)
- KNOBEL, Miss E. MAUD, F.Z.S., M.B.O.U. ; 32 Tavistock Square, W.C. 1. (Aug., 1916.) (*Hon. Secretary and Treasurer.*)
- KUSER, J. DRYDEN ; Faircourt, Bernardsville, New Jersey, U.S.A. (1912.)
- LAMBRICK, Prebendary M. ; Blagdon Rectory, Bristol. (Jan., 1921.)
- LANCASTER, Mrs. ; 7 Victoria Terrace, Walsall. (Dec., 1923.)
- LAUDER, P. ; Union Insurance Society of Canton, Ltd., Hong-kong, China.
- LAW, SATYA CHARAN ; 24 Sukeas Street, Calcutta. (1919.)
- LEACH, C. F. ; Vale Lodge, Leatherhead, Surrey. (June, 1914.)
- LECALLIER, Madame ; 109 Rue de la Republique, Caudebec-les-Elbeuf, France. (April, 1918.)
- LEE, P. ; 230 Collin's Street, Melbourne, Victoria, Australia. (April., 1924.)
- LE SOUËF, A. SHERBOURNE ; Zoological Gardens, Sydney, N.S.W. (Aug., 1913.)
- LEWIS, D. THOMAS ; Oaklands, Aberkifig, Glam. (1917.)

- LEWIS, J. SPEDAN ; Chairman's Office, Messrs. Peter Jones, Ltd., Sloane Square, S.W. 1. (Sept., 1924.)
- LEWIS, W. ; 37 Somerset Road, Teddington, Middlesex. (Jan., 1923.)
- LIBRARY INTERNATIONAL INSTITUT D'AGRICULTURE, Villa Umberto, 1. Rome 10.
- LIENAU, C. H. A. ; Newbury, 23 Victoria Avenue, Unley Park, South Australia. (Oct., 1917.)
- *LILFORD, The Lady ; Lilford Hall, Oundle, Northants. (Jan., 1898.)
- LILFORD, The Lord ; Lilford Hall, Oundle, Northants. (Jan., 1925.)
- *LOCKYER, ALFRED ; High Croft, Eversley Park Road, Winchmore Hill, N.21. (Dec., 1905.)
- LODGE, GEORGE E. ; Hawkhouse, Park Road, Camberley, Surrey. (May, 1923.)
- LONGDON, Mrs. C. A. ; Arreton, Epsom Road, Guildford. (Jan., 1925.)
- *LOVELACE, The Countess of ; Wentworth House, Chelsea Embankment, S.W.3. (May, 1906.)
- LOVETT, C. ; Glendale Park, Nashville, Tenn., U.S.A. (Dec., 1912.)
- LOW, GEORGE E. ; 14 Royal Terrace East, Kingstown, Ireland. (Mar., 1913.)
- LUCAS, Miss EMMA ; Bramblehurst, East Grinstead, Sussex. (Jan., 1925.)
- LUCAS, Dr. N. S. ; 19 Westbourne Terrace, W.2. (Jan., 1913.)
- LUIG, Dr. BRUNO ; 105 Avenue du Diamant, Bruxelles. (Nov., 1924.)
- LUDWIG, Herr OTTO ; Merseburgerstrasse 20, Halle a.d. Saale, Germany. (Jan., 1925.)
- MCCALL, C. HOME, C.B.E. ; Primrose Cottage, Walberswick, Southwold. (June, 1923.)
- MCCORQUODALE, Mrs. ; Cound Hall, Shrewsbury. (Jan., 1920.)
- MCDONALD, Miss B. ; The Cottage, Hallington Park, St. Leonard's-on-Sea. (Jan., 1925.)
- MACKAY, K. STEWART ; The Cedars, Esher, Surrey. (Jan., 1925.)
- MACKLIN, C. H., M.R.C.S., L.R.C.P. ; 90 Dunstable Street, Amptill, Beds. (May, 1923.)
- MALONE, Mrs. M. L'ESTRANGE ; West Lodge, Malton, Yorks. (Jan., 1902.)
- MANCHESTER PUBLIC LIBRARIES ; Reference Library, Piccadilly, Manchester. (July, 1913.)
- MAREIS, POMPEO N. ; 36 W. 44th Street, New York, N.Y., U.S.A. (June, 1924.)
- MARINER, JOHN SUMNER ; Newlands Cottage, Eynsham, Oxon. (Oct., 1923.)
- *MARSDEN, J. W. F.Z.S. ; Bank's Lane, Heysham Harbour, Lancs. (Jan., 1925.)
- *MARSHALL, ARCHIBALD McLEAN ; Chitcombe, Brede, Sussex. (Jan., 1906.)
- MASON, F. W. ; Northcliffe, Felixstowe, (June, 1923.)
- MAVROGORDATO, Mrs. T. ; Tanglewood, South Godstone. (July, 1923.)
- MAXWELL, C. T. ; 1 Shardcroft Avenue, Herne Hill, S.E. 24. (Jan., 1925.)

- MAXWELL-JACKSON, Miss M. ; Berry End, Knaresborough, Yorks. (Jan., 1925.)
- MAYER, F. W. S. ; Wulfruna, Concord Road, Homebush, N.S.W. (Aug., 1922.)
- MEADE-WALDO, E. G. B., F.Z.S., M.B.O.U. ; Stonewall Park, Edenbridge, Kent. (Jan., 1895.)
- METZGER, C. T. ; 6312 So. Ashland Avenue, Chicago, Ill., U.S.A. (Jan., 1925.)
- MILLER, Rev. T. W. T. ; The Rectory, Southwick, Sussex. (Sept., 1924.)
- MILLS, F. H. ; 34 Pine Street, New York, N.Y., U.S.A. (May, 1924.)
- MORTIMER, Mrs. ; Wigmore, Holmwood, Surrey. (Orig. Mem.)
- MOUNTAIN, BRIAN ; Norbury Park, Dorking, Surrey. (Feb., 1923.)
- MOUNTAIN, Capt. WALTON ; Groombridge Place, Kent. (Feb., 1923.)
- MULVEY, W. E. ; 5 Overleigh Road, Chester. (Jan., 1925.)
- MURAT, PRINCE PAUL ; 68 Rue de la Faisanderie, Paris XVI. (July, 1923.)
- MURRAY, Mrs. E. G. DEWAR ; Inchrye House, Lindores, Fifeshire. (1919.)
- MURTON-MARSHALL ; 5 Ashburn Gardens, South Kensington, S.W. 7. (Jan., 1925.)
- MUSEUM OF COMPARATIVE ZOOLOGY ; Cambridge, Mass., U.S.A.
- MYLAN, JAMES GEORGE, B.A., M.B. (Univ. Coll.), L.R.C.P. and L.R.C.S. (Ed.), etc. ; 90 Upper Hanover Street, Sheffield. (Dec., 1901.)
- NAIRNE, Dr. S. ; Burleigh Mead, Hatfield, Herts. (Jan., 1925.)
- NATIONAL ZOOLOGICAL PARK (The Superintendent) ; Washington, Dt., U.S.A.
- NEVILLE, Capt. T. N. C. ; 48 Sloane Square, S.W. 1. (July, 1917.)
- NEWMAN, Mrs. C. T. ; Tip Tree, Strathfield, Sydney, Australia. (July, 1924.)
- NEWMAN, T. H., F.Z.S., M.B.O.U. ; Verulam, Forty Lane, Wembley Park, Middlesex. (May, 1900.)
- NEWMARCH, C. T. ; Gamage's, Ltd., Holborn, W.C. (Aug., 1915.)
- NEW YORK ZOOLOGICAL SOCIETY, New York, U.S.A.
- *NICHOLS, WALTER B., M.B.O.U. ; Stour Lodge, Bradfield, Manningtree. (Jan., 1907.)
- NORMAN, J., jun. ; 333 Fulham Road, S.W. 10. (Jan., 1925.)
- NORTH, W. N. D. ; Meadow Court, Stoughton Drive, Leicester. (Dec., 1924.)
- "NOSHOMU" ; c/o Maruzen Co., Tokyo, Japan. (1919.)
- *OBERHOLSER, HARRY C. ; 2805 18th Street, N.W. Washington, D.C., U.S.A. (Oct., 1903.)
- OGLE, BERTRAM SAVILLE, M.B.O.U. ; Mill House, Steeple Aston, Oxford. (Dec., 1902.)
- O'REILLY, NICHOLAS S. ; 144 Eastern Road, Kemp Town, Brighton. (Dec., 1894.)
- OSBORN, HENRY F., jun. ; 33 Pine Street, New York City, N.Y., U.S.A. (March, 1924.)

- *PAM, Major ALBERT, F.Z.S.; Wormleybury, Broxbourne, Herts. (Jan., 1906.)
- *PAM, HUGO, C.M.Z.S.; 11 Carlton Hill, N.W. 8. (Sept., 1911.)
- PARKER, S. T.; 42 Turner Road, Derham Road, Norwich. (Jan., 1925.)
- PEARSON, Miss PERENA; Brickendonbury, Herts. (July, 1923.)
- PENROSE, FRANK G., M.D., F.Z.S., M.B.O.U.; Woodbury, 9 Grove Road, Eastcliff, Bournemouth. (Dec., 1903.)
- PERREAU, Mrs. G. A.; 16 Evelyn Court, Lansdowne Terrace, Cheltenham. (Jan., 1925.)
- PETTIGREW, M.; 6 Fifth Avenue, Kelvinside, Glasgow, W. (Jan., 1925.)
- PHILLIPS, E. R.; 12 Waltham Terrace, Blackrock, Ireland. (Jan., 1925.)
- PHILLIPS, JOHN C.; Wenham, Mass., U.S.A. (March, 1910.)
- PHILLIPS, L. L.
- *PICKFORD, RANDOLPH JOHN; Thorn Leas, Carmel Road, Darlington. (Feb., 1903.)
- PIKE, L. G.; King Barrow, Wareham, Dorset. (1912.)
- PILKINGTON, LADY KATHLEEN; Chevet Park, Wakefield. (Jan., 1925.)
- PITHIE, Miss D. E.; 68 Clarendon Road, Southsea, Portsmouth. (Jan., 1925.)
- PLATH, KARL; 2847 Giddings Street, Chicago, U.S.A. (July, 1924.)
- *POCOCK, R. I., F.R.S., F.L.S., F.Z.S.; 7 Taviton Street, W.C.1. (Feb., 1904.)
- POLLACK, A. J.; Loretto House, Heaton, Bradford. (Jan., 1925.)
- POND, Mrs. T.; Wylfa, Llangollen. (Jan., 1925.)
- PORTER, SIDNEY; Selwyn House, Old Normanton, Derby. (April, 1920.)
- *POTTER, BERNARD E., M.B., M.R.C.S., L.R.C.P.; 17 Portland Place, W.
- POWELL, Miss M. M.; Roselyn, Oakhill Park, Liverpool. (Jan., 1925.)
- PRINCETON UNIVERSITY LIBRARY; U.S.A.
- PURVIS, Mrs. C. J.; West Acres, Alnwick, Northumberland. (Jan., 1925.)
- PYCRAFT, W. P., A.L.S., F.Z.S., M.B.O.U., etc.; British Museum (Nat. Hist.), Cromwell Road, S.W. 7. (Nov., 1904.) (*Hon. Mem.*)
- PYMAN, Miss E. E.; West House, West Hartlepool. (June, 1919.)
- *RATTIGAN, Capt. G. E.; Fluder House, Kingskerswell, near Newton Abbott. (Aug., 1908.)
- REEVE, Capt. J. S., F.Z.S.; Leadenham House, Lincoln. (Jan., 1925.)
- REID, W. H.; Funchal, Madeira. (Feb., 1895.)
- REILLY, Rev. J. E., D.D.; 539 Westfield Avenue, Elizabeth, N.J., U.S.A. (Feb., 1924.)
- *ROBBINS, HENRY; The Maisonnnette, New Oxford Street, W.C. (April, 1908.)
- ROBERTS, Miss IDA; Beaumaris, Montpelier Street, Hobart, Tasmania. (Jan., 1923.)
- ROGERS, H. E.; "Arequipa," 7 Aigburth Road, Liverpool. (June, 1919.)
- *ROGERS, Col. J. M., D.S.O., F.Z.S., M.B.O.U. (late Royal Dragoons); Riverhill, Sevenoaks. (April, 1907.)

- ROGERS, W. T. ; 21 Priory Villas, New Road, Brentwood. (Jan., 1925.)
- ROOPER, Mrs. F. ; 11 Maze Hill, St. Leonard's-on-Sea. (Jan., 1925.)
- ROTHSCHILD, JAMES DE ; 34 Park Street, W. 1. (March, 1923.)
- ROTHSCHILD, LIONEL DE, M.P. ; 46 Park Street, W. 1. (Nov., 1913.)
- ROTHWELL, JAMES E. ; 153 Sewall Avenue, Brookline, Mass., U.S.A. (Oct., 1910.)
- ROYAL ZOOLOGICAL SOCIETY OF IRELAND ; Phoenix Park, Dublin. (Oct., 1905.)
- RUMSEY, LACY ; 23 Rua de Serpa Pinto, Villa Nova de Gaya, Oporto, Portugal. (April, 1919.)
- RYAN, G. E. ; 31 Porchester Terrace, Hyde Park, London, W. 2. (Jan., 1925.)
- RYCHARDS, J. A. ; 130 Claremont Avenue, New York, N.Y., U.S.A. (Dec., 1924.)
- *ST. QUINTIN, WILLIAM HERBERT, F.Z.S., M.B.O.U. ; Scampston Hall, Rillingon, York. (Orig. Mem.)
- SAKAI TATSUZO ; 2 Chrome, Kano Cho, Kobe, Japan. (1919.)
- SALKELD, WILLIAM ; Ravenswood, Kirkoswald, R.S.O., Cumberland. (Jan., 1925.)
- *SAMUELSON, Lady ; Hatchford Park, Cobham, Surrey. (July, 1916.)
- SAWREY-COOKSON, Miss JUNE ; 186 Cromwell Road, London, S.W. 5. (Sept., 1923.)
- SCHANENSEE, R. MEYER DE ; 1213 Spruce Street, Philadelphia, Pa., U.S.A. (Feb., 1924.)
- SCHUYL, D. G. ; 12 Toe-Haringvliet, Rotterdam, Holland. (Jan., 1925.)
- *SCLATER, W. L., M.A., F.Z.S. ; 10 Sloane Court, S.W.3. (Aug., 1904.)
- SCOTT, Capt. B. HAMILTON, R.F.A. ; Hamildean, Ipswich. (1912.)
- *SEPPINGS, Lieut.-Col. J. W. H. ; c/o Lloyd's Bank, Ltd., Cox & King's Branch (K. Section), 6 Pall Mall, London, S.W. 1. (Sept., 1907.)
- *SETH-SMITH, DAVID, F.Z.S., M.B.O.U. ; Zoological Society, Regent's Park, N.W. 8. (Dec., 1894.)
- SHANNON, Mrs. W. J. ; Commandant's House, Lydd, Kent. (1915.)
- SHERIFF, A. ; Edge Hill, 8 Ranulf Road, N.W. 2. (March, 1923.)
- *SICH, HERBERT LEONARD ; Corney House, Burlington Lane, Chiswick, W. 4. (Feb., 1902.)
- SILVER, ALLEN, F.Z.S. ; 18 Baneswell Road, Newport, Mon.
- SIMPSON, ARCHIBALD ; Stone Gappe, Bardsey, Yorks. (Feb., 1901.)
- SIMPSON, H. W. ; 6 Barry Road, Stonebridge, Willesden, N.W. 10. (Nov., 1924.)
- SLADDEN, J. H. ; 140 Denmark Road, Lowestoft, (Jan., 1925.)
- SLADE, G. J. ; 34 Milton Road, Fitzhugh, Southampton. (Jan., 1925.)
- *SMALLEY, F. W., F.Z.S., M.B.O.U. ; Hawthorns, 193 Clapham Road, S.W. 9. (1912.)
- SMETZ-MONDEZ, Dr. J. G. ; La Hétraie, Genval, Belgium. (Aug., 1924.)
- SMITH, PARIS ; 11 Broomhill Road, Woodford Green, Essex. (Jan., 1925.)

- *SMITH, PHILIP ; Haddon House, Ashton-on-Mersey, Sale, Manchester. (Dec., 1917.)
- SMITH, W. W. ; Cranmer, Dower Avenue, Wallington, Surrey. (Jan., 1925.)
- SNAPE, Major A. E., O.B.E. ; Stockton Heath, Warrington. (Jan., 1925.)
- SOUTHOFF, M. G. DE ; 13 Via San Spiritu, Florence. (1921.) (*Hon. Mem.*)
- SOUTHPORT CORPORATION, CURATOR OF ; Hesketh Park, Southport. (Jan., 1904.)
- SPRAWSON, EVELYN ; M.C., M.R.C.S., F.Z.S., 68 Southwood Lane, Highgate, N. 6. (June, 1923.)
- SPROSTON, Mrs. ; Elm House, Nantwich, Cheshire. (June, 1917.)
- SPURWAY, N. B. ; Glenwood, Stonegate, Leicester. (April, 1923.)
- STARK, J. ; Woods Cottage, Haddington, Scotland. (Jan., 1925.)
- STENT, STIRLING ; Beechlands, Bedhampton, Havant, Hants. (March, 1924.)
- STEVENS, H. ; c/o Midland Bank, Ltd., Tring. (Oct., 1911.)
- STILLMAN, PAUL F. ; 551 N. Broad Street, Elizabeth, N.J., U.S.A. (Nov., 1923.)
- STOKES, Capt. H. S. ; Longdon, Stafford. (Oct., 1922.)
- STOREY, Mrs. A. ; Hawling Manor, Andoverford, Glos. (Jan., 1925.)
- STOTT, A. E. ; 15 East Parade, Leeds. (Jan., 1925.)
- STRUBEN, Mrs. F. ; Spitchwick Manor, Ashburton, S. Devon. (Jan., 1923.)
- SUGGITT, ROBERT ; Suggitt's Lane, Cleethorpes, Grimsby. (Dec., 1903.)
- SUGGITT, W. E. ; Suggitt's Lane, Cleethorpes, Grimsby. (Jan., 1925.)
- SUTCLIFFE, ALBERT ; Fairholme, Grimsby. (Feb., 1906.)
- SWAYNE, HENRY A. ; 29 Percy Place, Dublin. (Jan., 1925.)
- SYKES, JOHN ; Whitehouse Cottage, Inveresk, Musselburgh. (Jan., 1925.)
- TAKANO, T. Z. ; c/o S. Tsuji, Tznrushi 5080 Oimachi, Ebaragun, Tokyo-fu, Japan. (Jan., 1921.)
- TAKA-TSUKASA, PRINCE NOBUSUKE ; 106 Honmuracho, Azabu, Tokyo, Japan. (Feb., 1914.)
- *TANNER, Dr. FRANK L. ; Vanvert House, Guernsey. (Jan., 1914.)
- *TAVISTOCK, The Marquess of ; Warblington House, Havant, Hants. (1912.) (*Hon. Editor.*)
- TESCHEMAKER, W. E., B.A. ; Ringmore, Teignmouth, Devon. (May, 1904.)
- *THOM, ALFRED A. ; Whitewell Lodge, Whitechurch, Salop. (June, 1913.)
- THOMAS, HENRY ; 15 Clinning Road, Birkdale, Southport. (Jan., 1895.)
- THOMASSET, BERNARD C., F.Z.S. ; Seend, Wilts. (July, 1896.)
- THOMPSON, Mrs. A. C. ; Glaisdale, Ely, Cambs. (Dec., 1924.)
- TODD, HORATIO ; Bromleigh, Neill's Hill, Knock-Belfast. (Aug., 1924.)
- TOMLINSON, MALCOLM R. ; Shepherd's House, Inveresk, Midlothian. (Jan., 1925.)
- TOWNSEND, S. M. ; 3 Swift Street, Fulham, London, S.W. (Jan., 1925.)
- TRACY, Mrs. A. L. ; Halsham, Shaldon, Teignmouth. (Jan., 1925.)
- TRANSVAAL MUSEUM ; The Director, Transvaal Museum, Pretoria. (Jan., 1921.)

- TRAVERS, Mrs. J. ; Windmill Cottage, Mayfield, Sussex. (Jan., 1925.)
- TROWER, T. R. ; 438 Caledonian Road, King's Cross, N. 7. (Jan., 1923.)
- TURNER, HERBERT J. ; Tremadoc, Keyberry Road, Newton Abbott. (Jan., 1925.)
- UPPINGHAM SCHOOL ; the School Library, The Old School House, Uppingham. (Nov., 1920.)
- VALENTINE, ERNEST ; 7 Highfield, Workington. (May, 1899.)
- VAN HEYST, A. ; Wyk by Duurstede, Holland. (July, 1924.)
- VAN SOMEREN, V.G.L., L.R.C.P. & S., Edin., L.R.F.P.S., Glas., L.D.S. ; Nairobi, B.E.A.
- VAN TOMME, ERNEST ; 4 Rue de Mouseron, Courtrai, Belgium. (Jan., 1923.)
- VENNER, Rev. P. K. ; Rotherfield, Sussex. (April, 1923.)
- WADDELL, Miss E. G. R. PEDDIE ; 4 Great Stuart Street, Edinburgh. (Jan., 1925.)
- WALKER, Miss H. K. O. ; Chesham, Bury, Lancs. (Feb., 1895.)
- WALL, Mrs. ; Cotton House, Marlborough, Wilts. (Nov., 1924.)
- WALLACE, NORMAN H. ; Iveragh, Shelbourne Road, Dublin. (Jan., 1925.)
- WASHINGTON, S. ; 47 Prospect Park West, Brooklyn, N.Y., U.S.A. (Jan., 1924.)
- WATSON, S. ; 37 Tithe Barn Street, Preston. (Jan., 1925.)
- WAUD, Capt. L. REGINALD ; Falcon Close, Woolton Hill, near Newbury. (May, 1913.)
- WAXMAN, A. E. WRIGHT DE BERRI ; Maitai, Murray Road, Beecroft, N.S.W. (Aug., 1914.)
- WEAVER, Mrs. H. H. ; Great Oak, Winchester Road, San Jose, California, U.S.A. (Dec., 1924.)
- WEDGE, E. ; Overdale, Chorley Wood, Rickmansworth, Herts. (Jan., 1925.)
- WEIL, HARRY ; 37 Ninth Avenue, New York City, N.Y., U.S.A. (Feb., 1924.)
- WEIR, J. ; Douglas Cottage, Ashley, New Milton, Hants. (July, 1918.)
- WELCH, F. D., M.R.C.S., L.R.C.P. ; Hartley, Longfield, Kent. (March, 1920.)
- *WELLINGTON, Her Grace the Duchess of ; Ewhurst Park, Basingstoke. (Oct., 1913.)
- WHIPHAM, Mrs. U. F. ; 34 Westbourne Park Road, W.2 ; and St. Loyes, Heavitree, Exeter. (July, 1921.)
- WHISTLER, H., I.P., F.L.S., F.Z.S. ; c/o Central Police Office, Lahore, Punjab, India. (Jan., 1925.)
- WHITE, JOHN YORK ; Celandine, 138 Verdant Lane, Catford, S.E. 6. (Jan., 1925.)
- WHITLAW, Miss ROSA M. ; Amerden, Taplow. (Aug., 1914.)
- WHITLEY, HERBERT ; Primley Hill, Paignton, S. Devon. (Sept., 1923.)
- WILLFORD, HENRY ; Sans Souci, Havenstreet, Ryde, Isle of Wight. (Nov., 1907.)
- *WILLIAMS, Mrs. C. H. ; 49 Okehampton Road, Exeter. (May, 1902.)

- WILLIAMS, SIDNEY, F.Z.S. ; Oakleigh, 110 Riverway, Palmer's Green,
London, N. 13. (Jan., 1925.)
- WILLS, LADY ; Littlecote, Hungerford. (March, 1924.)
- WILSON, Miss F. M. ; 15 Goldsmith Avenue, Acton, Middlesex. (Jan., 1925.)
- *WILSON, Dr. MAURICE A. ; Walton Lodge, Pannal, Harrogate. (Oct., 1905.)
- *WINN, The Hon. Mrs. ; 27 Hill Street, W. 1. (Nov., 1920.)
- WINTER, DWIGHT ; Center and Negley Avenue, Pittsburg, Pa., U.S.A. (1922.)
- WOOD, Dr. CASEY ; 7 West Madison Street, Chicago, U.S.A. (Sept., 1922.)
- WOODWARD, KENNETH M. ; Kamp Kenwood, Blairstown, New Jersey,
U.S.A. (March, 1915.)
- WOOLDRIDGE, Professor G. H., F.R.C.V.S. ; Royal Veterinary College, Camden
Town, N.W. (1912.)
- WOOLFE, C. NORTH : 612 Summit Avenue, Westfield, N.J., U.S.A. (March,
1924.)
- WORKMAN, WILLIAM HUGHES, M.B.O.U. ; Lismore, Windsor Avenue, Belfast.
(May, 1903.)
- *WORMALD, HUGH ; Heathfield, East Dereham, Norfolk. (Dec., 1904.)
- ZOOLOGICAL SOCIETY OF PHILADELPHIA : 34th Street, and Girard Avenue,
Philadelphia, Penn., U.S.A. (Jan., 1925.)

Rules of the Avicultural Society

As amended, December, 1924

1.—The name of the Society shall be THE AVICULTURAL SOCIETY, and its object shall be the study of Foreign and British Birds in freedom and in captivity. Poultry, Pigeons, and Canaries shall be outside the scope of the Society. The year of the Society, with that of each volume of the Society's Magazine, which shall be known as *The Avicultural Magazine*, shall commence with the month of January and end on the 31st of December following.

2.—The Avicultural Society shall consist of Ordinary and Honorary Members, and the latter shall be restricted in number to six, and be elected by the Council.

3.—The Officers of the Society shall be elected, annually if necessary, by members of the Council in the manner hereinafter provided, and shall consist of a President, one or more Vice-Presidents, a Secretary, an Editor, a Treasurer, an Auditor, a Scrutineer, and a Council of eighteen members. The Secretary, Editor, and Treasurer shall be *ex officio* Members of the Council.

4.—New Members shall be proposed in writing, and the name and address of every person thus proposed, with the name of the Member proposing him, shall be published in the next issue of the Magazine. Unless the candidate shall, within two weeks after the publication of his name in the Magazine, be objected to by at least two Members, he shall be deemed to be duly elected. If five members shall lodge with the Secretary objections to any candidate he shall not be elected, but the signatures to the signed objections must be verified by the Scrutineer. If two or more Members (but less than five) shall object to any candidate, the Secretary shall announce in the next number of the Magazine that such objections have been lodged (but shall not disclose the names of the objectors), and shall request the Members to vote upon the question of the election of such candidate. Members shall record their votes in sealed letters addressed to the Scrutineer, and a candidate shall not be elected unless two-thirds of the votes recorded be in his favour; nor shall a candidate be elected if five or more votes be recorded against his election.

5.—Each Member shall pay an annual subscription of £1, to be due and payable in advance on the 1st of January in each year. New Members shall pay, in addition, an entrance fee of 10s. 6d.; and, on payment of their entrance fee and subscription, they shall be entitled to receive all the numbers of the Society's Magazine for the current year.

6.—Members intending to resign their membership at the end of the current year of the Society are expected to give notice to the Secretary before the 1st of December, so that their names may not be included in the "List of Members", which shall be published annually in the January number of the Magazine.

7.—The Magazine of the Society shall be issued on or about the first day of every month, and forwarded, post free, to all the Members who shall have paid their subscriptions for the year; but no Magazine shall be sent or delivered to any Member until the annual subscription shall have reached the hands of the Business Secretary or the Publishers. Members whose subscriptions shall not have been paid as above by the first day in November in any year shall cease to be Members of the Society, and shall not be re-admitted until a fresh entrance fee, as well as the annual subscription, shall have been paid.

8.—The Secretary, Editor, and Treasurer shall be elected for a term of five years, and, should a vacancy occur, it may be temporarily filled up by the Executive Committee (see Rule 10). At the expiration of the term of five years in every case it shall be competent for the Council to nominate the same officer, or another Member, for a further time of five years, unless a second candidate be proposed by not less than twenty-five Members of at least two years' standing, as set forth below.

In the November number of the Magazine preceding the retirement from office of the Secretary, Editor, or Treasurer, the Council shall publish the names of those members whom they have nominated to fill the vacancies thus created; and these members shall be deemed duly elected unless another candidate or candidates be proposed by not less than fifteen Members of at least two years' standing. Such proposal, duly seconded and containing the written consent of the nominee to serve, if elected, in the capacity for which he is proposed, must reach the Secretary on or before the 15th of November.

The Council shall also publish yearly in the November number of the Magazine the names of those members nominated by them for the posts of Auditor and Scrutineer respectively.

9.—The Members of the Council shall retire by rotation, two at the end of each year of the Society (unless a vacancy or vacancies shall occur otherwise) and two other Members of the Society shall be recommended by the Council to take the place of those retiring. The names of the two Members recommended shall be printed in the November number of *The Avicultural Magazine*. Should the Council's selection be objected to by fifteen or more Members, these shall have power to put forward two other candidates, whose names, together with the signatures of no less than fifteen Members proposing them, must reach the Hon. Secretary by the 15th of November. The names of the four candidates will then be printed on a voting paper and sent to each Member with the December

number of the Magazine, and the result of the voting published in the January issue. Should no alternative candidates be put forward, in the manner and by the date above specified, the two candidates recommended by the Council shall be deemed to have been duly elected. In the event of an equality of votes the President shall have a casting vote.

If any Member of the Council does not attend a meeting for two years in succession the Council shall have power to elect another member in his place.

10.—Immediately after the election of the Council that body shall proceed to elect three from its Members (*ex officio* Members not being eligible). These three, together with the Secretary, Treasurer, and Editor, shall form a Committee known as the Executive Committee. Members of the Council shall be asked every year (whether there has been an election of that body or not) if they wish to stand for the Executive, and in any year when the number of candidates exceeds three there shall be an election of the Executive.

The duties of the Executive Committee shall be as follows:—

- (i) To sanction all payments to be made on behalf of the Society.
- (ii) In the event of the resignation of any of the officers during the Society's year, to fill temporarily the vacancy until the end of the year. In the case of the office being one which is held for more than one year (e.g. Secretary, Editor, or Treasurer) the appointment shall be confirmed by the Council at its next meeting.
- (iii) To act for the Council in the decision of any other matter that may arise in connexion with the business of the Society.

The decision of any matter by the Executive to be settled by a simple majority (five to form a quorum). In the event of a tie on any question, such question shall be forthwith submitted by letter to the Council for their decision.

The Executive shall not have power

- (i) To add to or alter the Rules ;
- (ii) To expel any Member ;
- (iii) To re-elect the Secretary, Editor, or Treasurer for a second term of office.

It shall not be lawful for the Treasurer to pay any account unless such account be duly initialled by the Executive.

It shall be lawful for the Secretary or Editor to pledge the Society's credit for a sum not exceeding £15.

Should a Member wish any matter to be brought before the *Council* direct such matter should be sent to the Secretary with a letter stating that it is to be brought before the Council at their next meeting, otherwise communications will in the first place be brought before the Executive.

A decision of a majority of the Council, or a majority of the Executive endorsed by the Council, shall be final and conclusive in all matters.

11.—The Editor shall have an absolute discretion as to what matter shall be published in the Magazine (subject to the control of the Executive Committee).

The Secretary and Editor shall respectively refer all matters of doubt and difficulty to the Executive Committee.

12.—The Council (but not a committee of the Council) shall have power to alter and add to the Rules, from time to time, in any manner they may think fit. Five to form a quorum at any meeting of the Council.

13.—The Council shall have power to expel any Member from the Society at any time without assigning any reason.

14.—Neither the office of Scrutineer nor that of Auditor shall be held for two consecutive years by the same person.

15.—The Scrutineer shall not reveal to any person how any Member shall have voted.

The Society's Medal

RULES

The Medal may be awarded at the discretion of the Committee to any Member who shall succeed in breeding, in the United Kingdom, any species of bird which shall not be known to have been previously bred in captivity in Great Britain or Ireland. Any Member wishing to obtain the Medal must send a detailed account for publication in the Magazine within about eight weeks from the date of hatching of the young, and furnish such evidence of the facts as the Executive Committee may require. The Medal will be awarded only in cases where the young shall live to be old enough to feed themselves, and to be wholly independent of their parents.

The account of the breeding must be reasonably full so as to afford instruction to our Members, and must appear in the *Avicultural Magazine* before it is published or notified elsewhere. It should describe the plumage of the young, and *be of value as a permanent record of the nesting and general habits of the species*. These points will have great weight when the question of awarding the Medal is under consideration.

In every case the decision of the Committee shall be final.

The Medal will be forwarded to each Member as soon after it shall have been awarded as possible.

The Medal is struck in bronze (but the Committee reserve the right to issue it in *silver* in very special cases) and measures $2\frac{1}{2}$ inches in diameter. It bears on the obverse a representation of two birds with a nest containing eggs, and the words "The Avicultural Society—founded 1894". On the reverse is the following inscription: "Awarded to [*name of recipient*] for rearing the young of [*name of species*], a species not previously bred in captivity in the United Kingdom."

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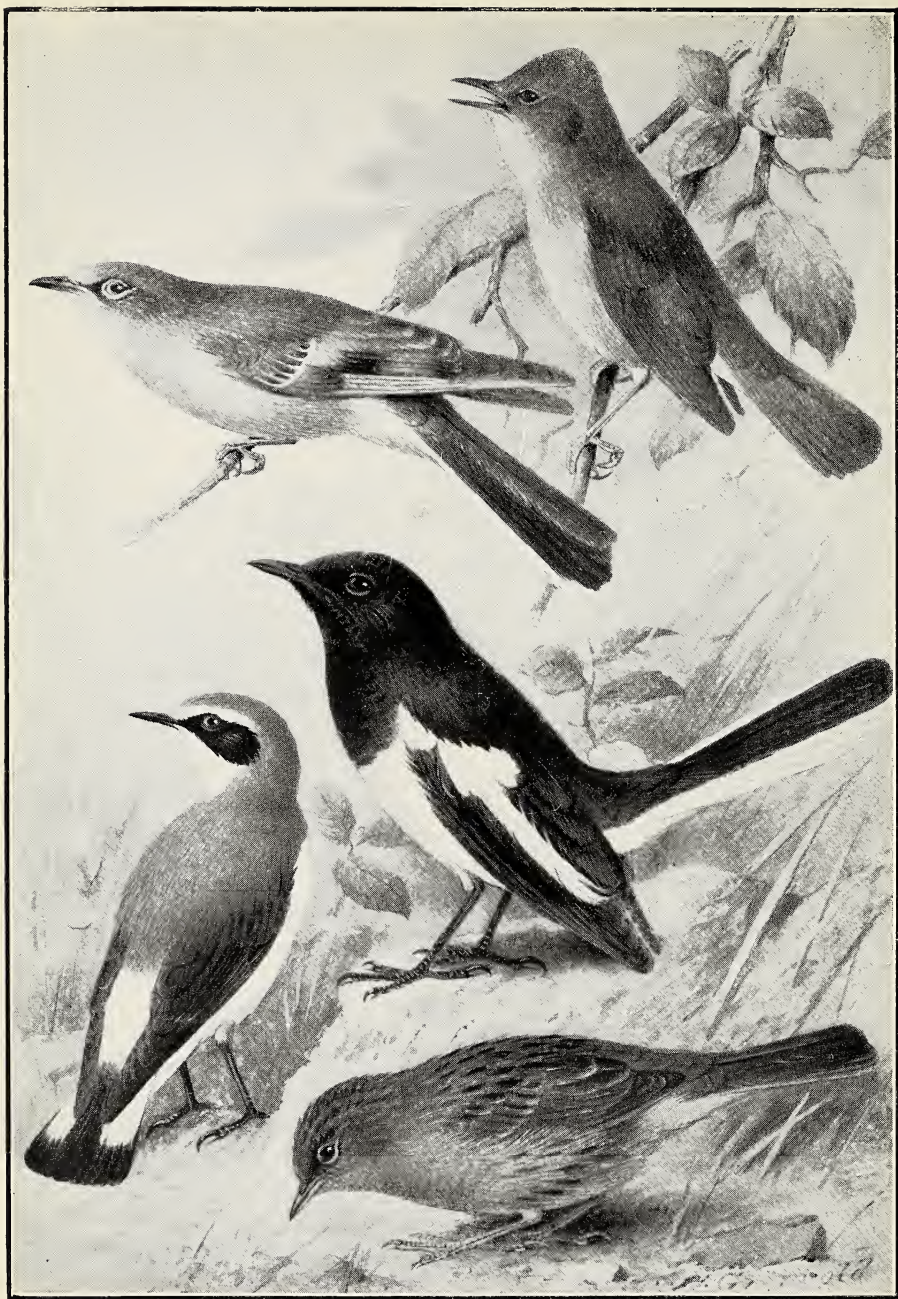
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THE AVICULTURAL MAGAZINE

BEING THE JOURNAL OF
THE AVICULTURAL SOCIETY
FOR THE STUDY OF
FOREIGN & BRITISH BIRDS
IN FREEDOM & CAPTIVITY

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FEBRUARY, 1925.

WAGTAILS AND PIPITS

By J. DELACOUR

The restricted family of the *Motacillidæ* includes two principal groups: the Wagtails (*Motacilla*) and the Pipits (*Anthus*).

Every one knows our Wagtails, whether it be the Dishwasher, grey, black, and white, or the "Printanière", grey and yellow. They are pretty birds, with a delicate beak, long slim legs, and a long tail which they constantly wag. They have terrestrial habits and walk with the greatest ease, frequenting stubble, meadows, and above all, the edge of water. The Dishwashers, especially, are very aquatic, hopping from stone to stone, resting on floating plants, and even when on the wing hunting insects which rise from the surface of the water; they are extremely graceful and nothing is prettier than to see them moving about amongst the rocks of a torrent.

The majority of the species are migrants; they are then sociable, and often live in small flocks. Their diet is entirely insectivorous. The males have a special livery in summer, and in winter they assume that of the females. One meets with Wagtails everywhere, and some among them have a very wide area of distribution.

The Wagtails nest on the ground, in small cavities, mostly in the neighbourhood of water; their eggs, four to five in number, are very much spotted.

One hardly ever sees any but European species in captivity; exotic species, excepting two, have never been imported; it must

be said that they very much resemble our own and offer no particular interest. Moreover, in spite of their undoubted grace, Wagtails and Pipits are not really adapted for a life of captivity.

The White Wagtail, or Dishwasher (*Motacilla alba*), is a beautiful bird with a grey back; with black and white wings and tail, white abdomen, head white in the middle, black above and below, black breast, and is seen everywhere near water. With the hen, and the cock in winter, the head has no black and the top of the throat is white; the plumage of the body is more mixed with grey. An allied species, the Pied or Yarrel's Wagtail (*M. lugubris*), is blacker on the top of the body, and is peculiar to England, where it replaces the preceding species.

The Blue-headed Wagtail (*M. cinerea*) has the top of the body slate-grey and the lower part yellow; two white lines start from the beak and pass above the eye and under the cheek; the cock in summer has the chin and the throat black; they are white, edged with black towards the bottom, in the hen, and the cock in winter; the tail is white, with the median feathers grey edged with yellow.

This Wagtail is more frequently met with in the southern parts of Europe. It is generally speaking sedentary, but one sees it in greater numbers in the North of France in winter.

The Yellow Wagtail (*M. flava*) has a shorter tail than the preceding ones, and goes farther from water. The male, in summer, has an olive green back and a head grey on the top, with a wide white eyebrow; it is pale yellow below; the wings and the tail are shaded with grey and yellowish white; the whole of the under part of the body is yellow. The female and the male in winter are paler, and have a white throat.

We shall only cite the allied species, which differ by a different distribution of the colours grey, black, yellow, and white: *M. rayi*, *M. feldeggii*, *M. campestris*, *M. borealis*.

The Alpine Pipit (*Anthus spipoletta*) is ashy-brown above, the middle of the feathers being darker; lower surface whitish, washed with vinous colour and spotted with brown on the sides; eyebrow, tawny white.

This species is found in summer in the mountains and descends into the plains or migrates towards the south in winter. An allied

species, the Rock Pipit (*A. obscurus*), of a more olive colour, is met especially at the seaside in the north-west.

The Meadow Pipit (*A. pratensis*) resembles the preceding: it is smaller and has the under part of the body all spotted with blackish brown. It frequents fields and meadows.

The Tree Pipit (*A. trivialis*) is olive grey above, streaked with brown on the head and back. Below, it is whitish, tinged with brown, with the breast and sides spotted and streaked with blackish brown. It is migratory and frequents the "Landes", bushes and sparse woods.

The Tawny Pipit (*A. campestris*) is brown above, fawn below, with a wide eyebrow of isabelline colour, brownish cheeks variegated with yellow, the lores and a stripe on the sides of the throat black.

It is migratory and frequents sand dunes and open and arid places.

Some exotic species have been imported; for example:—

The Madras Wagtail (*Motacilla maderaspatensis*), black above from the beak to the tail, which is edged with white; the wing is black, marked with white; head black, with white eyebrow; breast black; the under part of the body is white, washed with bluish grey on the sides. This species inhabits the whole of India and Ceylon.

Another Wagtail also has been imported from India, the *Limoni-dromus indicus*.

Finally, the Cape Pipit (*Macronyx capensis*) is brown tinged with orange on the forehead; tail, brown terminating in white; orange eyebrow, as well as the whole of the throat, which is surrounded with a black line starting from the beak and widening on the breast; under part of the body orange yellow, spotted with black on the breast; in winter the plumage is more sombre. This bird inhabits South Africa.

The Pipits stand, so to speak, half-way between the Wagtails and the Larks. They are also terrestrial and, while they have the delicate beak and the slim legs of the former, they resemble the latter by their tawny brown plumage, flecked with dark brown and their habit of singing while in flight. They also resemble the Larks by their mode of life and their movements; they are, however, more insectivorous. The cock and the hen are similar.

The Pipits are distributed all over the globe. They nest on the ground, and lay from four to six spotted eggs.

Wagtails and Pipits thrive very well in a cage and in an aviary, where they only require the ordinary care and diet of small insectivorous birds ; some insectile food, mixed half and half with bread and milk and scraped carrot suits them very well. However, on account of their terrestrial habits, they must be given a specially arranged cage, long and low, with a clod of turf, sand, and stones to rest on ; for the Wagtails it will be well to place at their disposal a fairly large basin, strewn with large pebbles.

In an aviary these birds thrive equally well, and when they have access to a small brook or to a pond, their evolutions on its banks are charming. Unfortunately, they are rather quarrelsome and one can hardly associate them with birds weaker than themselves. In spring, the cocks have to be separated.

AMERICAN WARBLERS

By J. DELACOUR

In America a family of small birds is found which replaces our European Warblers, and this is the reason its members are called American Warblers. These are the *Mniotiltidæ*.

These birds have a fine beak and generally resemble our Warblers in appearance, but on a smaller scale and with brighter colours, which are more elegantly distributed. Some sing well, but the greater part have a mediocre voice. On the other hand, nearly all of them are very pretty birds, many being more richly adorned than our European Warblers. Their tongue is bifid or furnished with brushes, and in this they resemble the *Cœrebidæ*. They are, however, essentially insectivorous. The majority are arboreal in habits, but some like to walk on the ground, while others climb on tree trunks.

The American Warblers are very numerous and very varied. The majority have not been imported, and those which have been have only arrived on rare occasions. Their transport is difficult, and many species, being protected in the United States, cannot now be exported ; they also offer slight interest to the majority of amateurs, who have never had the opportunity of seeing them. Otherwise, they are charming birds which, in captivity, require the diet of small

delicate insectivorous birds such as the Willow Warblers, Nightingales, etc.

By reason of their scarcity in captivity, we shall only briefly cite the few species which have been brought alive to Europe: *Helminthophila pinus*, olive yellow, with grey wings and tail; *Compsothlypis americana*, ashy grey, with olive coloured back, throat and breast yellow, and in the middle a double band of dark brown and orange; *Mniotilta varia*, all lined with white and dark brown; *Dendroica aestiva*, yellow, with back, wings, and tail mingled with grey and reddish brown lines on the breast; *D. palmarum*, olive grey with the upper part of the head maroon; *D. coronata*, variegated with dark grey and white, with the top of the head, the sides, and the rump yellow; *D. virens*, with the back and the tail olive green, the top of the head olive maroon, the wings and flanks dark grey and white, the belly pale yellow, the sides of the head bright yellow, the throat and the breast black. All these species are very small in size, very elegant, and have arboreal habits.

Siurus auricapillus is rather terrestrial; it is olive brown above, whitish spotted with dark brown below, with the crown bright red surrounded by a black line.

Icteria virens, larger, is olive brown above, with the eye surrounded with black and white above and below and all the lower parts yellowish fawn.

Oporornis formosa resembles it, but has no white on the face.

All these birds inhabit the United States in summer and migrate in winter to Central America and the West Indies. There are many other species, some even much prettier. But they will never be the habitual guests of our cages and we need not enlarge upon them here.

SOME NOTES ON A RARE RING-NECKED PARRAKEET

By ALLEN SILVER

How far and to what extent *Palæornis derbyana* is confounded with or related to *P. salvadori* I am not prepared to argue, as I possess little or no available information regarding the nestling, transitional

and adult plumages of both sexes of either species taken from observations of the living birds.

A few weeks ago a fellow member, the late Mrs. Dalton-Burgess, of Clifton, kindly invited me to examine a new "Ring-neck", which had been imported by one of our older and original members, Mr. John Frostick, of London, and who after examining skins at South Kensington could make it out to be no other than *P. salvadori*.

I have kept living specimens of *P. torquatus* and *docilis*, *P. nepalensis* and most of its subspecies, *P. cyanocephala*, *P. rosa*, *P. fasciata*, *P. longicauda*, and have seen alive *P. tytléri*, *P. alexandrina* (Javan Parrakeet), *P. derbyana*, and *P. peristerodes*, and am not unfamiliar with illustrations and in some cases skins of *P. nicobarica*, *P. modesta*, etc., but my first impression on seeing the subject of these notes was that it was new to me; was only second in size to the Alexandrine (not *Spathopterus*) Parrakeet, and had peculiar moustache streaks and cheeks of a hue not seen by me in any of the group before. Since then I have examined skins at the Museum and they agree with the bird in so far as adult males are concerned, allowing for loss of colour. Described from mental imprint I should say, including tail, that the bird measures full 20 inches. Prevailing colour green. The edges of the median wing-coverts yellowish, but not presenting so marked a yellow wing area as in some old specimens of the Banded or Moustache Parrakeet.

Moustachial streak broad and velvety black, extending from gape to end of ear-coverts and not tapered off as in some of the species in the group similarly marked. Feathers of the cheeks from gape to ear-coverts rich purplish lavender (not unlike the colouring of the breast band in some male Gouldian Finches): a thin bridle of black runs from in front of the eye to the nostril area. Crown and top of the head bluish green. Nape intensely rich moss green, followed by greyer green back, mantle, and feathers. Under surface from throat almost to vent greyish lilacine lavender. Upper mandible orange red, paler at point and edges; lower mandible black. No vinous line from back of the ear-coverts down the sides of the neck-coverts noticeable. Irides golden yellow and narrow, being scarcely noticeable and not exhibiting that wide pale area and dilatable pupil so marked in

P. eupatria and *torquatus*. The bill and skull in life conveys a comfortable rounded outline set on a thick rounded neck, and does not convey the massive and powerful appearance of the head so noticeable in the Alexandrine Parrakeet, which is portrayed to the fullest extent in the subspecies *P. magnirostris*, hailing from the Andamans.

Referring to *P. derbyana* Mr. Sclater kindly showed me recently at South Kensington, a coloured illustration in a book written by Mr. Hartert, and that agrees pretty well with the living specimens of *derbyana* I have seen, and shows a black bill as does the illustration on Tab 13 in Reichenow's "Papageien". A pair or two Derbyan Parrakeets were sketched by the late A. F. Lydon for the *Feathered World* some years ago, and the illustration is reproduced in *Foreign Birds for Cage and Aviary* by Dr. A. G. Butler.

Mr. D. Seth-Smith, in his most excellent work *Parrakeets*, gives the male of *P. derbyana* as having the upper mandible red and the female as having both mandibles black. Dr. Butler gives female as having the upper mandible red, which as far as I remember of a supposed living pair was the case. Of the sexed skins of *P. salvadori* I saw at South Kensington, the dry mandibles of the males were once apparently red and the females black and a young male (resembling the adult female) exhibited signs of the upper mandible changing colour from black to red.

Mr. Seth-Smith's work, p. 111, mentions the plate of *P. derbyana* by Wolf in the *Proceedings of the Zoological Society* and Mr. Louis Fraser's communications. The living Derbyans I saw came from China, as also did this specimen of *P. salvadori*.

Little seems to be known of the wild life of these Chinese Parrakeets. Can our Editor and Mr. Seth-Smith definitely clear up the matter as to whether Derbyans are or are not hens or immature specimens of *P. salvadori*? In other words, was the first skin described and termed *P. salvadori* a handsome old cock Derbyan seen for the first time?

If, however, there are clear specific differences in sex and young in both cases the matter should not be difficult to decide, but as information relating to the matter is so meagre I am not myself clear whether these birds are entitled to be lumped or hold only subspecific or racial rank or the differences are only those of age and sex.

Written descriptions of *Derbyana* do not give prominence to the extraordinary cheek colour and very broad ended moustachial streak which forms so conspicuous a feature in the living example of the bird termed *salvadori*. The B.M.C. describes the upper mandible of *derbyana* as red (David et Oustalet) and in the type description says, "bill black, feet usual Parrakeet colour." Possibly someone familiar with Chinese birds of the interior may also help us in the matter.

[The Editor has never seen a true Derbyan Parrakeet. The pair of birds sold to Mrs. Dalton-Burgess as immature Derbyans did not agree with the description of the species on reaching maturity: they were far too small and were wrongly coloured, and appeared to be only a local race of *P. fasciata*.—ED.]

BIRD LIFE NEAR BUENOS AIRES

By BERNARD E. POTTER

It was an impressive event at the end of August last to cross "the line" for the first time, to see the sun in the north, and the Southern Cross by night. Still more impressive the changed face of Nature at an old estancia 24 miles south of Buenos Aires. Here, close to Hudson's home, one could get a glimpse of the life he loved so well.

Seen everywhere strutting and bowing in its walk and tame as a Fowl, is the Hornero or Oven-bird, so-called because of its wonderful domed mud nest about 9 inches high, which looks like an oven. These nests are built on ledges about houses, in the fork or bough of a tree, one I photographed was on a gate at its hinge-end. A long and perilous drought has just ended with heavy rains. One nest near my window was being rapidly restarted. I noticed that the bird had in its bill some stiff material such as a twig coated with mud. The floor is not completed before the top and sides, so soakage by rain is avoided. When finished the entrance is at the side of the face of the structure, the other side is closed and infolded, so that there is entire protection from wind, weather, and natural enemies, nor can one's bent fingers reach the inside. The season was early spring, leaves just showing, many birds not yet paired. All the feathered folk seem much more



Nest of Oven-bird.



Ombú-tree with Nest of Saffron Finch.

[To face p. 36.]

animated and vociferous than with us. Especially so the Hornero. It is a treat to watch two greet each other with outstretched, quivering wings and joyous notes. The bird resembles a plump Thrush; its rufous tail is enough for detection.

The ombú-tree is the chief of the few indigenous trees. A single tree has numerous trunks emerging from a high raised dais of immense gnarled roots. The shade cast when in full leaf is a great protection from the sun's heat. These trees are unlike any we know, and form wonderful landmarks. They are often single, but here and there are in clumps. Most must be of great age. The site of many an estancia house has been selected for the shade of the ombú. The tree is, I believe, preserved with superstitious reverence. Wandering about Buenos Aires I came upon a great ombú at the corner of Once Square, close to the great and busy Western railway terminus. Many others right within the city must have lived long before the houses came. On the naturally almost treeless pampas the ombú has been the home and shelter of birds, so one has tried to give it some account.

The Yellow House-sparrow is a bright bird with yellow body and orange front; the hen bird is brown. Driving along the tracks, their golden hue reminded one of Goldfinch; near the house their shacks of nests were seen in the ombú. The common English House-sparrow has, alas, come to stay, and often sagaciously makes use of the old oven-nests.

The Argentine Cow-bird is very striking: black, with purplish play of colours of the Starling, which it equals in size, the hen being dun-coloured. These birds are polygamous; and like the Cuckoos lay their eggs in other birds' nests. They are vivacious and ubiquitous. The males seem to outnumber the females. One afternoon I watched many following the plough. In the furrows with them and Black-headed Gulls were also numbers of Jay-like birds, very quaint in many ways, with long tails and yellow bills and head feathers slightly plumed. They were the Guira Cuckoos, called by some Magpies. They are about 15 inches long and wander about in trailing flocks. On little provocation they make a great complaining chatter, and love to clamber about piles of sticks or clumps of bushes.

Much of my observation could happily be made on horseback,

which gave one the advantage of a nearer approach than on foot. The usual paces are a slow hand-canter or a walk. The native horse can keep up this easy canter for miles without effort, and it is peculiarly suited where roads are mere tracks and horses' feet unshod.

Often I passed Hudson's home, crossing on the way a sluggish stream or arroyo frequented by Marsh Birds. It was here, I am informed, that the great naturalist made many of his observations. Brownish-black birds, sometimes in flocks, were always passed, wading in the water or on the banks. They resemble Curlews except in colour, have long legs, and long down-curved bills and slender bodies. I learnt that the names for these birds is Cuervo. They also show the curious disparity in size of the Curlew, some tall, some short. They were very tame.

Perching on the long rush stems I saw the lovely Yellow-shouldered Marsh Bird; except for the bright gold colour of the shoulder the plumage is black, the female is brown. Another bird of the marshes, also seen in the montes (small woods), is the Silverbill. This bird is a little smaller; also black except the bill, which is of palest yellow colour and also the raised ridge round the eyes and line from eyes to bill. In flight the wings are white, but at rest black, due to the peculiar overlap of the feathers, which are black at the bases and tips. The marshes contained many of the Paraguayan Snipe. It interested me to watch one bird quite half mile away to windward soaring and descending, at each descent producing a sound resembling that of a far distant express train. Another marsh bird, the Greater Yellow-shanks, was constantly seen in company with smaller Waders. The Spur-winged Lapwing, or Terú Terú, has a very aggressive mien. I saw them mostly in twos or threes. The noise they set up reminds one of that of Guinea Fowl or a flock of Geese. They are larger than our Lapwing, have more intense colourings, and are very bold.

During my last ride past the marshes I had the luck to see pairs of the beautiful many-coloured Marsh Tyrant, or Kinglet, the size of Marsh Tits. They had probably just arrived and were very active flitting about the lower part of the reeds. The most conspicuous colours were black, white, yellow, and red. The light was not too good, but the red beneath the tail I took note of.

Our estancia house with its gardens and trees is a great centre for birds in a country which is naturally almost treeless. The woods consist chiefly of the tree of heaven—*Paradiso*. This grows well, makes excellent firewood, and is proof against the attack of locusts. Locusts were beginning to appear singly, about $2\frac{1}{2}$ inches long. I remember watching one in flight high in the air. At points along the line different birds would fly up as if to capture it, but would look at it then leave it.

The groups of tall, evergreen trees are mostly eucalyptus, forming excellent landmarks. In height and shape they take the place of our elms. Peach-trees are in full bloom, and orange- and lemon-trees heavily laden with fruit.

The House Wren is very like our own species, the song is not so stirring and lacks the trill; it is seen much in the woods as well as about houses. The Pigmy Dove, locally called "*Palomita*" or "*Tortolita*", is very tame and attractive. It is of a dun colour, but in flight light feathers of the tail show up. As it sets off to fly it has a curious roll so typical of the Doves. In the woods there had just arrived the Larger Spotted Dove, or "*Torcasa*". Four large dots can be counted upon the wing when at rest. I saw no Wood-Pigeons but great flocks of House-Pigeons. In our square-built dovecote, with Pigeon-holes on the entire inner faces of four walls, I calculated over 2,000 could be accommodated. The young birds are much used for the table.

The *Calandria* Mocking-bird is nearly the size of a Magpie. It has the same long tail and habit of making loops of flight from the ground. It is full of fun and very interesting to watch. The head and body resemble in colour those parts in a Grey Shrike, but the long tail—which can be spread like a fan—is characteristic. Martins and Swallows arrived during our visit in the middle of September. The Martin is larger than the Swallow. The black and white of the former and the forked tail of the latter were the chief noticeable points. The birds were wont to perch on the small branches of the ombú. However, as the weather grew suddenly colder they disappeared, although old nests under the eaves had been visited.

No description of birds could be complete without mention of

the sprightly Chingolo or Song Sparrow. His song is delightful. He takes the place of the Chaffinch and sings all day. The note consists of four sounds, the second higher than the others and the fourth a trill. The head has a little crest and the sides of neck rufous patches.

Wherever one may be, in or out of the house, the cry of the "bienteveo" (I see you well) can always be heard. He is a bold bird of the size of a Thrush, with a black and white head and bright yellow under parts. I tried with field-glasses to see a yellow line on the crest of the head. However, one day I chanced happily to watch two birds close by fly in the air displaying to each other, and then saw how a gorgeous golden-coloured cap expands over the whole head. The "bienteveos" cry enabled me to see, then hear, this bird right in Buenos Aires high up in the trees close to the Plaza Hotel, and again in the gardens by the quayside at Rio.

Owls are numerous, but in our part only the variety known as the Burrowing Owls. They are very active by day, are usually in pairs, often sitting close together on one of the conical ant-hills.

One afternoon, whilst walking towards some swampy ground I saw a large bird like a Buzzard flying low. Its general colour was very dark with light cheeks and under parts. Later, I noticed a dog rolling on his back. Going up to the spot I came upon the freshly killed head-end of a reddish-brown crop-eared sharp-toothed animal which I learnt to be a Huron. The bird had evidently just killed and partially eaten the animal. I was told that the bird was a Carancho. A very common bird of prey is the Chimango, a large Hawk of light drab colour, with broad light bands across the tail and wings as seen when these parts are expanded in flight. It beats the ground like a Harrier, but does not look at all formidable for its size. I saw many, but never noted any of the dash of the Sparrow-hawk or pounce of the Kestrel, though both the latter are smaller. I have seen Chimangos with Black-headed Gulls and other Waders at the edges of the ponds, or lagunas (the local name).

It was not long before I flushed the Spotted Tinamu, generally known as a Partridge. This bird is solitary, does not fly unless almost trodden upon, then gets away with a great speed in a straight line.

It is very tame and can be easily made out by its long neck running in the grass and hiding behind tussocks.

In the paddocks near the house were three Crested Screamers, known by the natives as Chajas. Though well able to fly they spent most of their time near their adopted home, and would even allow themselves to be handled. At the fine Zoological Gardens at La Plata, I came upon three of these great birds, being attracted by their loud screams. Their concert was a weird one to witness.

In the paddocks also was a fine old male Ostrich, the last of a flock which had been brought from South Africa. The smaller native Ostriches, or Rheas, which used to be common in these parts, have now disappeared into the interior, where the ranchers tell me they are still very numerous.

Alas! my holiday was all too brief to let me watch for the many migrants due to arrive very soon, including the Humming-birds.

BIRDS OF THE RIVIERA

By LIEUT.-COLONEL A. M. FORBES

It is a common complaint among visitors to the Riviera that there are no birds. Flowers there are in abundance, both wild and cultivated, but there seem to be few birds, and those difficult to see.

It must be admitted that on the Promenade des Anglais at Nice, or round the bridge tables at the various English clubs, there are very few birds to be seen. But the Riviera, both French and Italian, includes wooded hills, wide river beds, rocky cliffs, and sandy shores where, if you sit still, you can see and study birds of all kinds.

Some visitors are disappointed with the number of birds they see, because they usually leave for England before April and May, when many birds arrive from Africa.

A few notes, therefore, on some of the birds which have been seen and identified along the Italian Riviera may be of interest. It is only right and proper to begin with the Golden Eagle, the king of birds, and a passage in *Riviera Nature Notes* by "C. C." tells us that in the spring of 1898 a postman going from Sospel to a neighbouring village was attacked by Eagles and so seriously injured that

he died not long afterwards. However this may be, Eagles are not uncommon in the mountains that enclose the Riviera on the north, and I saw two that had been shot fairly recently, one near Valdieri and one in the mountains above Taggia in the Argentina Valley. I also saw another in captivity which had been taken from the nest when young.

The Griffon Vulture is said to nest near Tenda, and I saw a specimen in a private collection at Bordighera.

Among the Hawks the Sparrow-hawk and Kestrel are not uncommon, and the Peregrine Falcon, though rare, has been seen and, alas ! shot.

The Plovers include the Stone Curlew or Norfolk Plover, with his large pale yellow eye and lifelong habit of trying to evade notice ; the Green Plover, or Lapwing, here as in England the devourer of countless wire-worms and other insect pests ; the Ringed Plover, found in flocks along the shore ; and the Golden Plover (with sharp pointed wings unlike the rounded wings of the Green Plover) on the rough hillsides.

Ptarmigan, seldom found below 2,000 feet, inhabit the mountain ranges of San Remo, while the Blackcock is met with on the lower slopes. At the mouths of such rivers as the Nervia and the Roya, Woodcock and Snipe find the soft mud from which they extract worms, on which they feed ; and the Avocet, scooping with upturned bill from side to side in shallow pools, has also been observed.

On the same stretch of shore you may see, in May, the Oyster-catcher's bright orange legs and bill ; and the Little Stint, whose home is in Arctic Europe, is an occasional visitor. The Curlew, nesting on the uplands, makes periodical visits to the shore in search of crustacea ; and the Great Crested Grebe, though rare, is not unknown in the Nervia Valley.

On the rough, heath-covered hills above Bordighera, the mysterious Night-jar lays her two eggs on the bare ground, and escapes notice by day by sitting lengthwise on the bough of a fir-tree. The Wryneck, or Cuckoo's Mate, may be seen in Spring whipping up with its long and sticky tongue the ants of which it is so fond.

Should you stay so late as May, you ought to see the Hoopoe raising his tawny crest as he alights on the ground ; and, before now, in

Bordighera gardens, a gleam of gold and black among the evergreen oaks has revealed the Golden Oriole.

The Kingfisher flits—a living sapphire—along the banks of the Nervia, and the merry Dipper boldly plunges in where the stream is clear, to emerge a moment later and begin a series of bows on a lichen-covered rock.

Partridge, Pheasant, and Quail are all to be found along the Riviera, but usually after May; and the Pratincole, which winters in Africa, comes over to this district now and then. Along the cliffs you may look out for Puffins, which breed as far south as Portugal, and for Razor-bills, which spend half the year, from August to March, at sea.

Among the many Gulls frequenting the coast, the commonest are the Black-headed, the Lesser Black-backed, and the Kittiwake Gull. This last has great power of sustained flight, and ringed Gulls have been known to accompany liners across the Atlantic. The Duck family do not appear to be so very numerous in this district, but among the Diving Ducks found on the Riviera are the Tufted Duck, and the Red-crested Pochard, while the Teal, Mallard, and Shelduck represent the surface-feeding Ducks.

The Black-winged Stilt is conspicuous among shore-frequenting birds, and among other long-legged Waders are the Heron, the Night Heron, the Glossy Ibis, and the Crane. This last is a rare visitor from Africa, but the Night Heron appears to be as common here as the ordinary Heron is in suitable localities in the British Isles.

I also noticed a Bittern, but was given to understand that they are uncommon.

The Ruff and the Reeve are to be met with occasionally, and I have seen specimens both in Italian and French collections of birds. The House Martin, Swallow, and Alpine Swift are all well known along the Riviera, though the Alpine Swift naturally is seldom seen away from the Alpes Maritimes. The bird which you are perhaps most likely to notice on your arrival is the Blackcap (*Sylvia atricapilla*), whose liquid melody charms the ear as much as his slender grey form, crowned with black, pleases the eye.

Among other warblers you will hear the Chiff-chaff, even if you do not see him, and the Willow Wren and Garden Warbler sustain a thin but melodious under-current of song.

The Golden-crested Wren, the smallest of European birds, and one ever heedless of the onlooker, may often be seen carefully searching the branch of some fir-tree for the insects that his eye alone could detect ; I have watched them more than once within two hundred yards of a main road. The Tits to be met with include the Great Tit, Blue Tit, and Long-tailed Tit ; and not long ago, near Bormes-les-Mimosas, I watched the lively movements of the Crested Tit (*Parus cristatus*).

Thrushes include the Mistle Thrush, Song Thrush, Fieldfare, and the Blue (or solitary) Thrush, which loves to perch "all alone upon the house-top".

On the surface of the precipitous cliffs of the Roya Valley has been seen the beautiful grey and rose-coloured plumage of the Wall-creeper (*Teichodroma muraria*) whose true home is in the Swiss Alps, and he is worth going far to see.

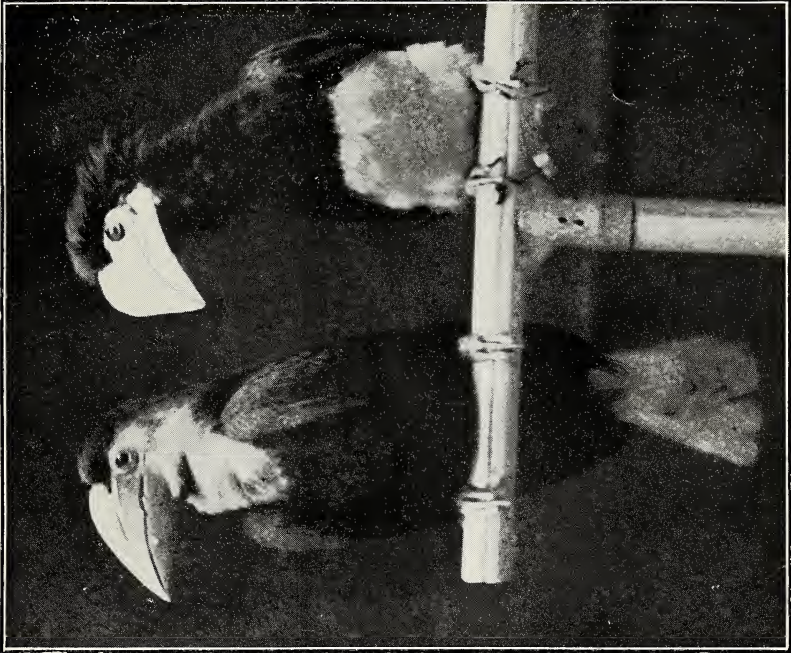
Over the same valley the Buzzard and the Kite occasionally float on broad pinions, and a specimen of the former was added this year to the private collection I have mentioned before.

The Spotted Fly-catcher is abundant everywhere, and both Grey and Pied Wagtails can be seen running nimbly in pursuit of insects along the margin of almost any stream.

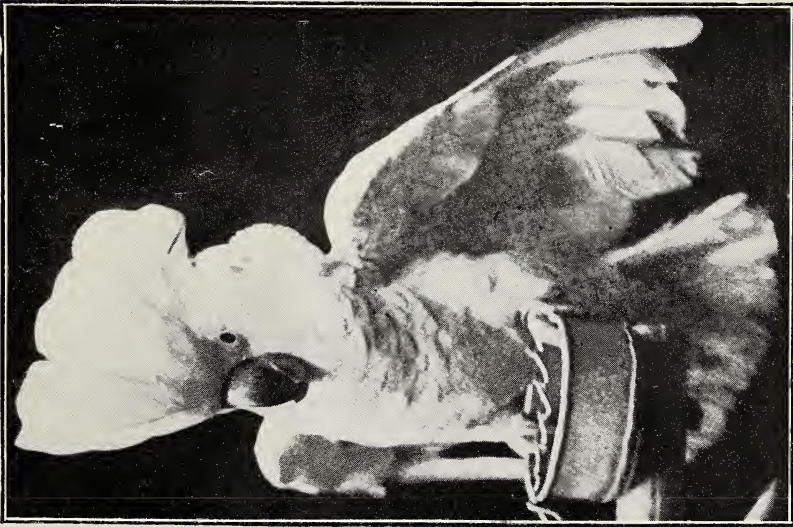
In May, the bright-hued Bee-eater may be looked for, a visitor from Southern Spain ; but I could not obtain any evidence of its nesting in this district.

Two Pelicans, at least, are recorded in Liguria, but it would be unfair to hold out much hope of seeing this skilful fisher so far from his native Africa.

The Sedge Warbler is not uncommon in the cane-brakes by the riverside, and one specimen of the Penduline Tit, a wanderer from Southern France, was obtained near Bordighera. The Redstart is plentiful, and only a short time ago I met a visitor who had watched the Dartford Warbler sufficiently long to be sure of the identity of that shy lover of the gorse. With the familiar Green and Great Spotted Woodpeckers, the Robin, Blackbird, Jay, Starling, and Jackdaw I will bring these notes to an end in the hope that they may induce visitors to this pleasant land of sunshine to extend the list, which is by no means exhaustive, from their own observation.



Hornbills in the Collection of the late
Mrs. Dalton-Burgess.



White-crested Cockatoo in the Collection
of the late Mrs. Dalton-Burgess.

A VISIT TO THE COLLECTION OF THE LATE MRS. DALTON-BURGESS

By MRS. LANCASTER

I had a great treat in May this year. Mrs. Dalton-Burgess very kindly allowed me to see her wonderful collection of rare Foreign Birds. They are perfectly beautiful. I had heard about them, but when I saw them I was like the Queen of Sheba who, when she saw the glories of Solomon, said, "Behold, the half was not told me." I wish all our members could have seen them. I cannot remember the names of many, the Lories in particular. When I think of them, all I can see is a perfect blaze of gorgeous colours. They were so very well cared for that although there were a great many there was not even the slightest birdy smell: the air was sweet and fresh. They were in aviaries and cages all in spotless condition. Mrs. Dalton-Burgess lived in a charming house furnished with exquisite taste; at the top of the house there is an enormous room, which was full to overflowing with the most lovely and valuable birds. It is beyond my powers to describe them as they deserve, but I felt I should like to write a few words about them for our Magazine. I do not know which struck me most. The Hyacinthine Macaw that lived in a little room by himself, and dances and sings and eats Brazil nuts as if they were bananas, or a sweet little White Cockatoo about as big as a Grey Parrot and so tame that he snuggles up against your neck like a baby, or a Whistling Crow that loves to lie on the floor of his cage and have his chest rubbed! Or a young Blackcap, the first to be bred in captivity. Then there are crowds of magnificent Parrakeets, Kings, Common Lories, Queen Alexandras, Rock Peplars, Adelaides, Rosellas, Mealy and Redheaded Rosellas, Pennants, and many lovely little birds such as Gouldian Finches, Weavers, etc. I cannot think of half of them. Then we came to the Budgerigars, a perfect feast of colour. The beauty of the deep blue, the delicate loveliness of the pale blue, the quiet and fascination of the greys with black or white margins, the rather sombre olives, or the cheerful yellows and greens of ordinary kinds all in faultless condition, it was delightful to see them. I was three hours having all these treasures shown to me, and I should have liked to have begun over again! I came away after being fortified

for my journey with a most delightful tea and feeling that I could never thank Mrs. Dalton-Burgess enough for the pleasure she had given me. I must just say to end that when I reached home and went into the garden and saw my own aviary, about 16 feet long, with a few Budgerigars, I felt still more like the Queen of old, for there was no more spirit left in me. I have got over that feeling now, and am gradually getting a few more birds. I have now Peaceful and Diamond Doves, and some day hope for Blue Budgerigars !

HOW TO KEEP INSECTIVOROUS BIRDS IN PERFECT CONDITION

By P. F. M. GALLOWAY

(Concluded from p. 16.)

The foods I use for all my birds are the same. I use my own insectile mixture—"Life". This I put into a basin and use boiling water, not cold: a little poured over it, and then stirred with a fork. If not sufficient, I add more until it is fairly moist; not sloppy. I then press it down and leave it for a short time, after which I stir it again, and find that the food has absorbed the boiling water and it is all beautifully crumbly and moist. I then use a milk cheese called "Little Wilts" (all grocers keep it). I use a piece over which I have sprinkled a little powdered biscuit and chop it fine like suet, the biscuit preventing the cheese from sticking to the knife, in the proportion of one small teaspoonful to every tablespoonful of insectile food. The cheese sounds a peculiar food for a bird to eat: there is no "Little Wilts Cheese" for them in the wild state; quite true, but, however this may be, it is a food that the birds are fond of and is most nourishing without being fattening, and easily digested, quite the reverse of ordinary cheese, and curiously enough it is the first artificial food (if I may use the term) that a bird first caught will pick out. This preparation I call the staple food, and as I have always found the birds do so well upon it, I am content to leave well alone.

It is easy enough to mix a lot of ingredients together and give it

to birds as a staple food, but there is one thing that has to be remembered—there are fat-forming foods and foods that do not make undue fat.

If a wild bird is caught and its bodily condition examined, it will be found that it is plump and well covered with flesh, with a little fat at the base of the neck or commencement of breast; but a bird in cage, if fed on too stimulating or fat-forming food, is bound to suffer sooner or later, and this is what takes place. The bird, after a time, puts on a great deal of fat externally. Later it cannot put more on externally, so it gradually gets fat internally, and the result is that the exertion in flying from one perch to the other often results in the bird falling on the floor in a fit. These fits often occur one after the other; each fit undermines the bird's constitution and a severe one takes place, the bird dropping stone dead. It will be found that it has ruptured a small blood vessel on the brain or in the region of the heart.

Exercise is the outlet for superfluous fat, which the wild bird, of course, is able to get; therefore, when in confinement, it must have a nourishing but not a fat-forming diet.

Live diet is very essential. I have been asked if half-a-dozen mealworms a day is sufficient for one bird; I may at once say it is not.

An insectivorous bird when at liberty is devouring insects at intervals from sunrise to sunset; therefore, it is quite obvious that it is not sufficient to give six mealworms.

This is how I feed mine. After I have placed the staple food in their tins I give each bird four mealworms killed and cut in halves first thing in the morning; again at noon, and the same at about five p.m. in the evening. This is during the short days of winter. In addition, I give two or three wasp grubs.

In the long days from April to August I feed four times per day—at 8 a.m., 12 o'clock, 5 p.m., and their last feed about dusk. I give, during April and May, as live food, mealworms only, as the wasp grubs are at an end by this time, being used up during winter, and there is nothing else until the fresh ants' cocoons are in season, which is from the first week in June until end of August. I then dispense with mealworms to a great extent, only giving them twice per week as a change of diet.

If I could get fresh live ant cocoons all the year round, I should use very few mealworms, for I consider the former the finest live diet of all, and so do the birds ; and the feeding round, where many birds are kept, takes less than half the time.

In an aviary, instead of having to prepare the food with mealworms, all that is necessary is to stir in a couple of handfuls of ants' cocoons, every bird gets its fair share of live food, whereas if given mealworms they often do not. A bird will swoop down and eat more than its share, and some of the others have to go short and sometimes get none.

Where birds have nests of young in an aviary and partake of live food, the young do exceedingly well during the fresh ants' egg-time.

I have not had much experience with foreign birds, but have had some, and although they may be seed-eaters they will eat with relish my insectile food.

My Blue Budgerigars devour it greedily, and go straight to their young and feed them, and I could not wish birds to grow and feather more rapidly.

I have also three (Yuhinias) Indian Crested Tits. When I first had them they lived on Nestlé's milk and honey mixed with warm water, and fresh, live ants' cocoons.

They now eat the wasp grubs and insectile food well, and are in perfect health and condition.

I have mentioned this to show that insectile food is a fine change of diet from everlasting seed, just in the same way that ants' cocoons and wasp grubs are a welcome change from the everlasting mealworm in feeding insectivorous birds.

THE BLACKCAP (*Sylvia atricapilla*)

This bird is another excellent songster and one very easy to keep.

A Blackcap that will sing some of the Nightingale notes mingled with its own, I consider beats the Nightingale. I have, on a few occasions, heard a Blackcap in the height of the singing season pour out several liquid notes of the Nightingale song, so perfectly that had I not seen the bird actually in the act of doing so quite close to me, I should never have believed it could imitate so accurately.

A hand-reared bird will, like the Nightingale, begin to warble in undertone long before it is full-grown. In the nests all the young have light chocolate brown caps, but to an experienced eye the cocks can be picked out easily from the hens ; in the latter, the cap is lighter in colour and the breast more buff than in the opposite sex. A young cock bird has the cap deep brown, in some cases quite three shades deeper, and the breast lighter and more of a very pale, silvery grey, with throat also much lighter than a hen.

The Blackcap will thrive and live to a good age, if properly fed and attended to.

I have known them arrive in mild seasons in my county so early as 27th March, their usual time being about the end of the first week in April.

In regard to their nest, some are very badly built. I have found nests so flimsy and badly attached to the briars that as soon as the young were large enough to show quills the nest has given way and the whole lot destroyed. But birds do not cry because their young have been lost or taken, whether by human hands or vermin ; neither do they weep because their eggs have been taken, any more than the fowl weeps because its egg has been taken for the breakfast table, yet this trash has been written, which is most misleading to those who know little about birds.

Instead of fretting, they commence, often within a few days, to build again, so that in reality they have simply been delayed. Not that I am advocating for one moment the wholesale taking of nests ; far from it.

I have seen children destroying nests, and many a lecture I have given them, and nearly lost my temper over it. They simply, in country places on their way to school, pull out the nests they find. It does not matter if they are even only half-built, out they have to come, to be kicked about the road like a football. They take the eggs for the sheer love of destroying, without rhyme or reason. They have no cabinet in which they could have just one clutch of each species, where they could be learning something interesting about birds. It is simply wilful destruction. I only hope that the children are not of the same destructive habits in other parts as they are about here in my locality.

I consider that the children about here at any rate are as destructive to the birds as the vermin, and their parents should help to put a stop to it.

Birds do not fret over the loss of their eggs or young, as I said before. I have proved this over and over again. Only this season I knew a Nightingale's nest in a narrow underwood, she had been incubating four days when her eggs were destroyed by field-mice. This happened on the 20th May. The birds moved up the underwood about one hundred yards away from the spot where the nest had been destroyed, and by the 20th June she had her second nest containing four young about 3 days old. She had actually built, laid her clutch of eggs, and hatched all under a month. Unfortunately these were also all destroyed by vermin a week after I found them, and as the season was so far advanced, she would not build again—at any rate, I should very much doubt it.

It is no trouble to keep a Blackcap in confinement, as so much of its natural food can be found, not for a few weeks only, but nearly the whole year round.

This species is a great lover of berries, and although it will eat fruit, berries of various kinds are its favourite; this, of course, in addition to its natural insect food; like the Garden Warbler it eats both insects and berries.

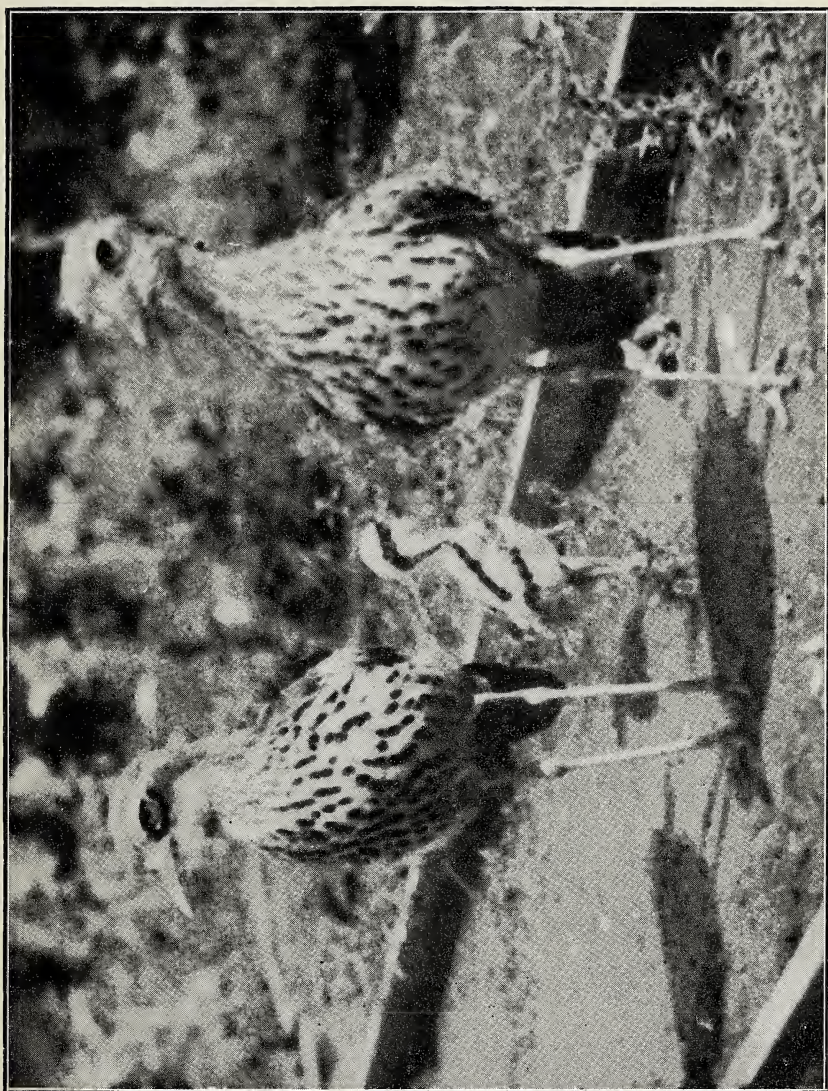
The first food this bird seeks out on arrival in this country in regard to berries, are those of the ivy. This would be in early April; they are then ripe. After these are over, they feed on insects of various kinds until the wild raspberry is ready about June, and later in the year on elderberries.

They will hang about in the neighbourhood of elder bushes when the berries are ripe for some considerable time, in fact, right up to the time of migration, feeding almost wholly on these.

The cage suited for a Blackcap should be rather smaller than for a Nightingale: one about 18 inches long by $12\frac{1}{2}$ inches high by 9 inches deep.

From the nature of their food (fruit and berries) the floor of their cage requires to be cleaned regularly every day.

They should be fed on the insectile mixture exactly like the



Southern Stone Curlews with Young.

Bred by Mrs. A. L. Nimmo, of Knightsbridge, South Australia. The old pair have reared a brood of young ones regularly for several seasons past.

Nightingale, also upon the live food described for that bird, and, in addition, berries.

In April they can have ripe ivy berries; when these are over, give a small piece of banana or sweet pear: then when the raspberries are ripe, substitute these for the banana and pear. In August, or as soon as the elderberries are ripe, let the bird have these as long as they can be got, for they love them. They would be over by about the middle of October, and before very long, the privet berries will be ripe, and these will last until about February.

It will be seen from this that a great deal of the Blackcap's food, in regard to berries and fruit, can be obtained nearly all the year round. Blackberries they do not care for, and I have never known them in the wild state to touch them.

AVICULTURE FROM THE *IBIS*, 1901 TO 1921

(Concluded from p. 26.)

E. PEALEI. "I kept a number in captivity, to which they seem to be particularly well adapted. Over twenty were brought alive to this country, where they proved themselves to be hardy and capable of nesting in confinement." (See *AVIC. MAG.*, Dec. 1911.) "These birds in captivity underwent a second annual (but partial) moult in December." Bahr. *Avifauna of Fiji*. 1912, 305.

ESTRILDA ASTRILD is among the commonly imported small Ploceidæ. Finn, loc. cit.

CORDON-BLEU. Dr. Butler mentions one which lived for six or seven years. 1902, 675.

FOUDIA MADAGASCARIENSIS. A few used to be imported occasionally but none seen lately. Finn. *Cage-birds of Calcutta*. 1901, 434.

BAYA WEAVERS. All three common. Finn, loc. cit., *supra*. "The Baya makes an interesting pet, as it is easily tamed and taught to perform tricks." Jesse. *Birds of Lucknow*. 1902, 555.

PLOCEUS MEGARHYNCHUS. Hume. Is a good species. Finn kept two in 1889. They were caught at Naini Tal. Plate. F. Finn, 1901, 29. E. W. Harper obtained a male in August, 1902, in the Calcutta bird market. Finn, 1902, 169.

STARLINGS

"Various Starlings and Mynahs are often seen caged. Much the commonest is:—

ACRIDOTHERES TRISTIS, which is even more commonly kept than *Eulabes intermedia* and sometimes talks nearly or quite as well. It also becomes so tame that it may be allowed full liberty." Albinos not uncommon. Finn. Cage-birds of Calcutta. 1901, 431.

A. GINGINIANUS is sometimes caged. Finn, loc. cit.

A. CRISTATELLUS. "As an excellent talker is in great requisition . . . for a cage-bird." Vaughan and Jones. Birds of S.E. China. 1913, 174.

ÆTHIOPSAR FUSCUS. Sometimes caged. Finn, loc. cit.

GRACULIPICA NIGRICOLLIS is occasionally imported from China in small numbers. Finn, loc. cit.

TEMENUCHUS PAGODARUM. Sometimes caged. Finn, loc. cit. "Caged by the natives, being a great favourite as a songster. It is an excellent imitator of other birds' notes." Jesse. Birds of Lucknow. 1902, 547.

STURNIA STURNINA. "Daurian Starlet." "A male purchased in June, 1916, kept in good health until the autumn, when it sickened and died. It was a cheerful little bird and sang often, the song being occasionally harsh, but containing many melodious notes. It was very cleanly and very fond of bathing, keeping its plumage so free from dirt that when it died it was difficult to tell from the made-up skin that it was a cage-bird. This bird's favourite food seemed to be bread and milk. It also ate millet and raw beef, but did not care for fruit or grasshoppers. However, when plants covered with aphides were placed in the cage, it picked these off with evident pleasure." La Touche. Birds of N.E. Chihli. 1920, 663.

STURNIA MALABARICA. Sometimes caged. Finn, loc. cit.

STURNIA ANDAMANENSIS. Occasionally imported. Finn, loc. cit.

PASTOR ROSEUS. Sometimes caged. Finn, loc. cit.

STURNOPASTOR CONTRA "is frequently seen caged and from its very sweet liquid notes is certainly better suited than any other of its family for a pet . . ." Finn, loc. cit.

STURNUS MENZBIERI. Sometimes caged. Finn, loc. cit.

EULABES INTERMEDIA. "The Common Talking Mynah is one of the best-known cage-birds in Calcutta, being brought in . . . by scores . . . which include both adult and newly fledged specimens . . . Some are very fine talkers, but I have only heard one that was really good . . . They often prove but short-lived pets, and I am inclined to think that the 'satoo' diet is too rich for these fruit-eating birds . . ." Finn, loc. cit.

E. RELIGIOSA. This, a smaller bird, "is not often caged here." Finn, loc. cit.

E. JAVANENSIS "is a favourite cage-bird and can readily be taught to talk, clever birds commanding a very high price." Robinson and Kloss. Birds of N. Malay Peninsula. 1911, 67.

AMYDRUS MORIO. "Male captured . . . with a broken wing showed very little fear, readily taking locusts, grubs, and pieces of orange through the bars of its cage . . ." C. F. M. Swynnerton. Birds of Gazaland. 1908, 8.

SPREO BICOLOR. "Thrive well in captivity if fed on meat, and we found them an attractive bait for the trapping of lynxes and wild cats . . . The Boers declare that they do great damage to the fruit." Seimund and Grant. Birds of Deelfontein. 1904, 365.

ORIOLES

"Are not generally kept and the few that are do not seem to thrive well, especially the common *Oriolus melanocephalus*.

ORIOULUS TRAILLI bears confinement far better than the yellow species, being less restless . . ." Finn, loc. cit., 430.

DRONGOS

"Only one bird of this family is commonly kept here :—

DISSEMURUS PARADISEUS, the 'Bhimraj'; but few specimens are brought in and these are hand-reared birds in poor condition, which seldom live long, as they require—but do not usually get—a very large cage. This species is . . . an excellent mimic. I have even heard that it will occasionally talk, and I myself have known one individual that could imitate the song of a canary to perfection and also mew like a cat; while another with which I am at present

acquainted not only possesses the latter accomplishment, but whistles two or three lines of a song with absolute accuracy of execution." Finn, loc. cit.

CHIBIA HOTTENTOTTA. "Is sometimes on sale, but is not popular." Finn, loc. cit.

DICRURUS CÆRULESCENS. "Is occasionally to be procured and is said to whistle very well." Finn, loc. cit.

PARADISE BIRDS AND BOWER-BIRDS

Paradisoidæ always very scarce and very dear. Finn, loc. cit.

Two male King Birds of Paradise and some Greater and Lesser in the Insect House at the Zoo. 1905, 293.

Birds of Paradise brought back by Mr. Goodfellow: Two Red Birds of Paradise, one Twelve-wired, several pairs of Kings. Hitherto, the only hen recorded as imported is a hen King bird, which died the day after reaching Sir Wm. Ingram's aviary. *Ex Times*, 12th June, 1907. 1907, 516.

The hen King birds are new to the Zoo collection. 1907. Loc. cit.

Birds of Paradise at present in the Zoo. *Paradisæa minor*, one male; *P. rubra*, one male; *P. apoda*, one adult male, one (?) young male, one female; *Seleucides alpa*, one male; *Cicinnurus regius*, one pair. 1908, 548.

New Birds of Paradise at the Zoo; brought by C. B. Horsbrugh. Seven Raggi's, seven Lawes', eight Hunstein's, four Manucodes (*Phonygama purpureo-violacea* and *chalybeata*), one New Guinea Rifle-bird (*Ptilorhis intercedens*), three Black-headed Cat-birds (*Elurædus melanocephalus*), two Sub-alar Bower-birds (*Amblyornis subalaris*). 1908, 636, and 1909, 209.

The following reached the Zoo October, 1908: Five Raggi's, one Hunstein's, one Rudolf's, seven Lawes', two Violet Manucodes, one New Guinea Rifle-bird, one Black-headed Cat-bird. 1909, 209.

Mr. Horsbrugh writes that after settling down "Live birds, mammals, and reptiles came in to such an extent that our collapsible cages were soon filled, and we had to build two large aviaries under the house . . . Into one of these we turned all the Hunstein's Birds of Paradise, which soon became tame enough to feed from our

hands; the other held several sorts of Doves and some Raggi's Paradise-birds . . . we had never handled such confiding and fearless creatures as these (Paradise-birds). They would usually take food from our hands within three days of their capture.

The Hunstein's were decidedly more delicate than the other species, but usually agreed very well amongst themselves when caged."

Later, about a dozen Lawes' Birds of Paradise were obtained.

"Unlike Hunstein's . . . they were as hardy as we could wish, and quickly became tame.

Our natives could not appreciate our wish to receive hen Paradise birds . . . We had to offer double rewards for hens of *P. raggiana*, and even then we only obtained three specimens."

We also got six *Ælurædus melanocephalus*, a few *Amblyornis subalaris* and *Phonygama purpureo-violacea*, and one *Ph. chalybeata*. "The first-named were delicate and we had very great difficulty in keeping a couple of females alive; but the Manucodes were as strong as *Parotia lawesi*, and soon developed murderous tendencies towards each other, necessitating separate cages."

A single *Lophorhina minor* obtained but it had been too roughly treated by the natives and it did not live. C. B. Horsbrugh. To Brit. New Guinea for Paradise Birds. 1909, 209.

Mr. W. Goodfellow . . . returned to England on 6th August with a good collection of living Paradise-birds, amongst which were examples of *Paradisornis rudolphi*, *Astrarchia stephanice*, and *Epimachus meyeri*. 1909, 715.

PARADISEA MINOR. Display. Ogilvie Grant. 1905, 429. Plate. And see above. 1905, 1908.

P. APODA. See above. 1905, 1908. Its introduction to the West Indies. W. Ingram. Forty-eight set free on Little Tobago (EX AVIC. MAG.). 1911, 403.

P. RUBRA. See above. 1907, 1908.

PARADISEA RAGGIANA. See above. 1908, 1909.

CICINNURUS REGIUS. See above. 1905, 1907, 1908. Its display. W. Ingram. 1907, 225. Plate 1.

SELEUCIDES ALBA. Twelve-wired B. of P. See above. 1907, 1908.

LOPHORHINA MINOR. See above. 1909 (end).

PARADISORNIS RUDOLFI. See above. 1909, 209.

PAROTIA LAWESI. See above. 1908, 1909.

PHONYGAMA HUNSTEINI. See above. 1908, 1909.

PH. PURPUREO-VIOLACEA. Ditto.

PH. CHALYBEATA. See above. 1908.

PTILORHIS INTERCEDENS. Mr. Brooks' Rifle-birds laid two eggs, both of which got broken. "The hen has the same voice as the cock, only not so strong. She also dances and whistles . . ." 1911, 577.

See also above, 1908, 1909.

ÆLURÆDUS MELANOCEPHALUS. See above. 1908, 1909.

AMBLYORNIS SUBALARIA. See above. 1908.

CROWS

AFRICAN ROOK. "When taken young . . . becomes very tame, and we had two pets which made great friends with everyone in camp." Seimund and Grant in *Birds of Deelfontein*. 1904, 367.

CORVUS AUSTRALIS and C. TORQUATUS. The Australian and Chinese Crows occasionally seen in the market. F. Finn. Cage-birds of Calcutta.

GARRULUS GLANDARIUS DIAPHORUS. Chihli Jay. One kept from May to October, 1917, and then given away. "Was fed on Kaoliang, raw beef, fruit, insects, etc. Acorns given to it were stored in various parts of the cage for future use." La Touche. *Birds of N.E. Chihli*. 1920, 636.

MAGPIE. Occasionally seen. Finn, loc. cit.

UROCISSA OCCIPITALIS. Pretty regularly brought in. Finn, loc. cit.

U. ERYTHORHYNCHA. "The Chinese keep a few in captivity." Walton. *Birds of Peking*. 1903, 22.

DENDROCITTA RUFA, INDIAN TREE-PIE. Often seen in the Bazaar. Finn. CISSA SINENSIS. Pretty regularly brought in. Finn, loc. cit.

GARRULUS LANCEOLATUS. Ditto.

G. BISPECULARIS. Sometimes. Finn, loc. cit.

G. LIDTHI. A living example of this rare Jay has lately been received by the Berlin Zoo. Ex Field, cxv, 779. 1910, 568.

CYANOCORAX CYANOPOGON. This Brazilian bird once seen in the Calcutta Bazaar. Finn, loc. cit.

RED-BILLED CHOUGH. Occasionally to be seen. Finn, loc. cit.

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WARBLERS AND SMALL INDIGENOUS TURDIDIA

By MARCEL LEGENDRE

A. The Warblers

The family of Warblers, or *Sylviæ*, is subject to frequent modifications at the hands of classifiers because it contains side by side several species of birds which are anatomically nearly allied, but differ widely in their habits and behaviour. For the sake of simplicity they are here divided into three groups. Warblers proper, Aquatic Warblers, and Wood Wrens.

I. WARBLERS PROPERLY SO CALLED

The true Warblers live in woods, hedges, and gardens. They are very lively, flitting unceasingly from bush to bush, and rarely descend to the ground. They are insectivorous and frugivorous, and very fond of fruit and berries. Their song is rather loud, agreeable, and varied. They build slight cup-shaped nests of dried grass, and lay four to six oval eggs which are nearly always spotted.

Warblers are quickly tamed and soon become accustomed to captivity, they are long lived, and breed readily. They should be fed on insectivorous mixture, a little crushed hemp, a few mealworms, ants' eggs, and fruits and berries in their season, such as elder or service berries, etc.

The Blackcap (*Sylvia atricapilla*) is olive brown above and ashen grey beneath, the male has a black cap and the female a reddish one. It inhabits the greater part of Europe, North Africa, and Asia Minor. This common Warbler is one of our most melodious songsters, and in consequence much sought after by amateurs.

The Garden Warbler (*S. simplex*) is olive brown above with a whitish throat, breast and flanks russet grey. The female is like the male, only slightly paler. It is found throughout Europe except in the extreme North, Asia Minor, and Persia, and passes the winter in North Africa. It is a sweet songster, its notes soft and flute-like and very varied.

The Lesser Whitethroat (*S. curruca*) has the top of the head ashen, its nape, back, and rump are ashy brown, wings and tail brown, white beneath. The female is rather duller. Like the above-mentioned, it is widely distributed and common in the same countries. This Warbler owes its name to its continual lively but monotonous twittering.

The Orphean Warbler (*S. orphea*). Head dark brown, body olivaceous above, whitish below, wings dark grey, tail brown with the outer feather partly white. The female slightly redder, wings and tail of a lighter brown. It inhabits Central and Southern Europe also North Africa. This is a large Warbler (length 17 cm.), and one of our most lively songsters; the Germans call it "master of tongues", and it certainly does imitate the song of several other birds.

The Grey Warbler (*S. communis*). Crown and cheeks ashy grey tinted reddish, wings blackish, throat pure white, breast faintly pink. The female's breast is russet rather than pink, and her throat is not so white. It is found throughout Europe and winters in Africa. A very common species, very lively in its ways.

The Subalpine Warbler (*S. subalpina*). Ashy grey above, more or less bluish on the head and neck, breast chestnut, belly whitish, wings and tail brown. A white streak separates the grey head from the red lower face. It inhabits the southern countries of Europe, and lives on rocky ground among brushwood; its song resembles that of the Grey Warbler.

The Spectacled Warbler (*S. conspicillata*). Head ashy blue, back

ashy red, throat white, breast vinous red, lighter on the belly. Loes and round the eyes black, eyelids white. The female is duller. It inhabits Southern Europe and Northern Africa, is much rarer than the preceding species, but has the same habits.

The Barred Warbler (*S. nisoria*). Dark grey above, throat white, belly whitish with brown transverse blotches. The female darker above, and having the abdominal marking less pronounced. Inhabits Central Europe from the Baltic to Italy, not common in France, winters in Africa. This bird and the Orphean Warbler are the largest of the family, and they both mimic the songs of other birds.

The Black-headed Warbler (*S. melanocephala*). Black-headed, body dark grey above, greyish white beneath, becoming russet brown on the sides of the body, eyelids reddish. The female has the crown of the head dark grey. Inhabits the Mediterranean Basin, Asia Minor, and North Africa.

Rüppell's Warbler (*S. ruppelli*). Crown of the head, throat, and front part of neck black; white beneath with a pink tinge in the middle of the abdomen. A white stripe from the beak to the neck. The female has no black, and her colour is more ashy. This pretty species is found in Greece, Asia Minor, and the east of North Africa in winter.

Here may be mentioned another little bird of modest plumage and insignificant song, the Dartford Warbler (*M. undata*), which is only found in waste places, mountainous spots, and a lover of brambles and heaths, inhabiting the south and west of Europe. Various subspecies are found in England, in the west of France, and in Corsica. This family also contains a bird which is not commonly met with in France, the Rufous Warbler (*Agrobates galactodes*), with reddish plumage and a bright red tail. These two uncommon birds are without interest to the amateur.

II. AQUATIC WARBLERS

Reed Warblers differ from the above in their abode and habits. They live in damp places, on the banks of ponds and watercourses. They run about on the ground hopping amongst and climbing reeds, build their nests among the stems of aquatic plants, and feed exclusively

on insects. Their song is varied, and with some exceptions more noisy than tuneful.

In captivity these birds require care and special feeding. As many insects as possible should be added to the best soft-bill mixture. If they are kept in a small aviary it is a good plan to plant clumps of reeds round the drinking fountain, or failing these some upright bars. I will only mention the best known species.

The Icterine Warbler (*Hypolaïs icterina*). Greenish brown above, wings and tail brown, bordered yellowish grey, bright yellow beneath, a yellow streak on either side of the forehead. It inhabits Europe and winters in Africa.

The Melodious Warbler (*H. polyglotta*). Above olive brown, wings and tail brown, edged with olive, very bright yellow beneath, a yellowish streak on each side of the forehead. The habit which this species has of imitating the songs of other birds has gained it the name of "the counterfeiter".

The Great Reed Warbler (*Acrocephalus arundinaceus*). Olive brown above, slightly tinted with russet, whitish below; a faint streak above the eye, and a circle round the eye yellowish white. Inhabits the North and South of Europe and Northern Africa. This very common Warbler forms a link between the Blackbirds and the Warblers. It is a rather large bird (19 cm.). Other nearly allied species differ very slightly from the preceding, they have the same habits and live in the same places; for instance, the Reed Warbler (*A. streperus*) and the Marsh Warbler (*A. palustris*).

The Sedge Warbler (*A. schænobaenus*) and the Aquatic Warbler (*A. aquaticus*) closely resemble the above. They show great agility in running among and climbing reeds and water plants; their song is not unpleasing and they sing by night as well as day.

The Grasshopper Warbler (*Locustella naevia*) has the upper parts of the body olive shaded with brown with oval blackish spots in the centre of its feathers, the under parts are ashy white with small brown spots on the throat and narrow yellowish eye-streaks. It inhabits Central and Southern Europe and winters in Africa. This charming little bird always hides itself; it has a curious song which much resembles the sounds made by grasshoppers or crickets. Absolutely

insectivorous, in order to keep it alive in captivity it must for some time be fed only on insects and very gradually be got on to an insectivorous food of the choicest kind.

Among other Locustellæ which are found in Europe and have the same habits, I will mention *Locustella fluviatilis*, *luscinioides*, *certhiola*, *lanceolata*. These birds are all so much alike that to describe one is to describe all.

III. THE WOOD WRENS

Wood Wrens are small birds (11 to 12 cm.), which all have the same way of living and the same manners. They are lively, active, and quick; they jump about perpetually moving their wings and tails; their song is not particularly varied, but serves to distinguish the different species. Their domed spherical nests with the opening at the side are fairly large and generally built on the ground. These little birds do well in captivity, they make delightful pets, and require plenty of insects with their food.

The Chiff-chaff (*Phylloscopus collybita*) is olive brown above, yellowish-white spotted with yellow beneath, and has yellow eye-streaks. It inhabits Central and Western Europe and winters in Africa, as do also the following:—

The Willow Wren (*P. trochilus*) greenish grey above, yellowish below, eye-streak yellow.

The Bonelli's Willow Wren (*P. bonelli*). Above, greyish olive, the rump more or less yellow, under parts whitish, eye-streak white.

The Wood Wren (*P. sibilatrix*). Greenish above, under parts sulphur yellow paling to white below the breast. Europe and more particularly Asia possess many other species of Wood Wrens, which all have the same habits. They are naturally confiding and allow themselves to be closely approached. It is easy to watch them moving among thin woodland and hedges; you will first hear the bird, and perhaps you will think that it is some way off, but all the time it is close to you just above your head, but practically invisible in its green and yellow plumage, which is so well adapted to harmonize with the foliage of the tree which shelters it.

B. The Small Thrushes

I. REDBREASTS, REDSTARTS, AND NIGHTINGALES

Two groups of birds are included among the Turdidæ, together with Blackbirds and Thrushes, notwithstanding their small size, because of the many points of resemblance between them. These groups consist of Redbreasts, Redstarts, Bluethroats, and Nightingales on the one hand, and Chats and Wheatears on the other. They are sometimes called miniature Turdidæ, because in their habits, ways of living, and general characteristics they strongly resemble Blackbirds. Like them they are lively, gluttonous, and run rapidly over the ground, often quivering their tails meanwhile.

These birds are all charming in captivity, their song is marvellous, and their plumage beautiful; also they become very tame. It is, however, essential to keep them by themselves, two cock birds should never be put together, even different species which are of the same colour. In order to enjoy the melody of the best singers among them, they should always be kept in a separate cage.

The Redbreast (*Erithacus rubecula*) is one of our best known and best loved birds. Clad in olive brown on the upper part of the body, his belly is silvery white; and he derives his name from his handsome orange red breastplate. The female may be known by her paler colouring and smaller size. This is always an extremely tame bird even in the wild state, and very inquisitive when, standing very upright on his delicate feet he looks intelligently at one out of his large expressive eyes. In captivity he should be given a mixture, with berries, mealworms, and table scraps, for which he will thank you throughout the year with his cheerfulness and his sweet melancholy song. They have bred in aviaries; some people have even succeeded in obtaining a cross between the Redbreast and Hedge-sparrow. The type and some subspecies inhabit Europe and Asia.

The Redstart (*Phænicurus phænicurus*) is much desired for a pet, for to beauty of plumage he joins a charming song. The male has the crown of the head, the upper part of the neck and body ashy blue, the forehead, sides of the neck, and throat are beautiful velvety black; the rusty red of the breast becomes slightly paler on the flanks only

to blaze brightly in the tail-feathers, and a pure white diadem adorns the forehead. The female wears a simple russet gown. Of a melancholy nature and loving solitude, this bird requires careful feeding and a liberal supply of live insects. It is found throughout Europe and migrates into Asia and Africa.

The Black Redstart (*P. titys*) has the same habits and is found in Central and South Europe; it requires similar treatment in captivity. It is not as brilliantly coloured; the upper parts are ashy blue, forehead, cheeks, and throat deep black, the tail bright red. The female is grey, slightly russet above. This species prefers stony localities and buildings, thus it is often met with in towns. Its song is not melodious, it utters harsh quick notes and then hurried cries. It should be noted that these species have a summer and winter plumage.

Asia possesses some fine species of Redstarts, as also Northern Africa. From the latter country I will name the Algerian Redstart (*Diplootocus moussieri*). One of the most delightful birds with the song and habits of our Redbreast. It has often been kept in confinement; our colleague, Dr. Arnault, has some young ones which he brought back from a recent ornithological journey.

The Bluethroat (*Luscinia cyaneola*) is much sought after for the beauty of its plumage and its rarity. The male has a deep brown back, the belly greyish white, and the throat adorned with a fairly large patch of beautiful azure blue, in the centre of which shines a round pure white spot. The female has only a small blue spot on the throat. The Bluethroat frequents marshy places and ground well covered with brushwood and osiers. It should be given the same food in captivity as the Redstarts. It has a curious song, one might fancy that one heard two voices, one deep-toned like the sound of a hurdy-gurdy, the other clearer and more flutelike; it augments its song with scraps borrowed from sounds which it is accustomed to hear; for instance, one of my Bluethroats imitated the croaking of tree frogs which were in the same spot.

There is a subspecies (*L. suecisa gaelkei*) in the Norwegian mountains which has a red spot instead of a white one. All the Bluethroats occasionally have a spotless blue patch. The type species inhabits

Central and Northern Europe and in winter comes south to Northern Africa, with a double migration in France.

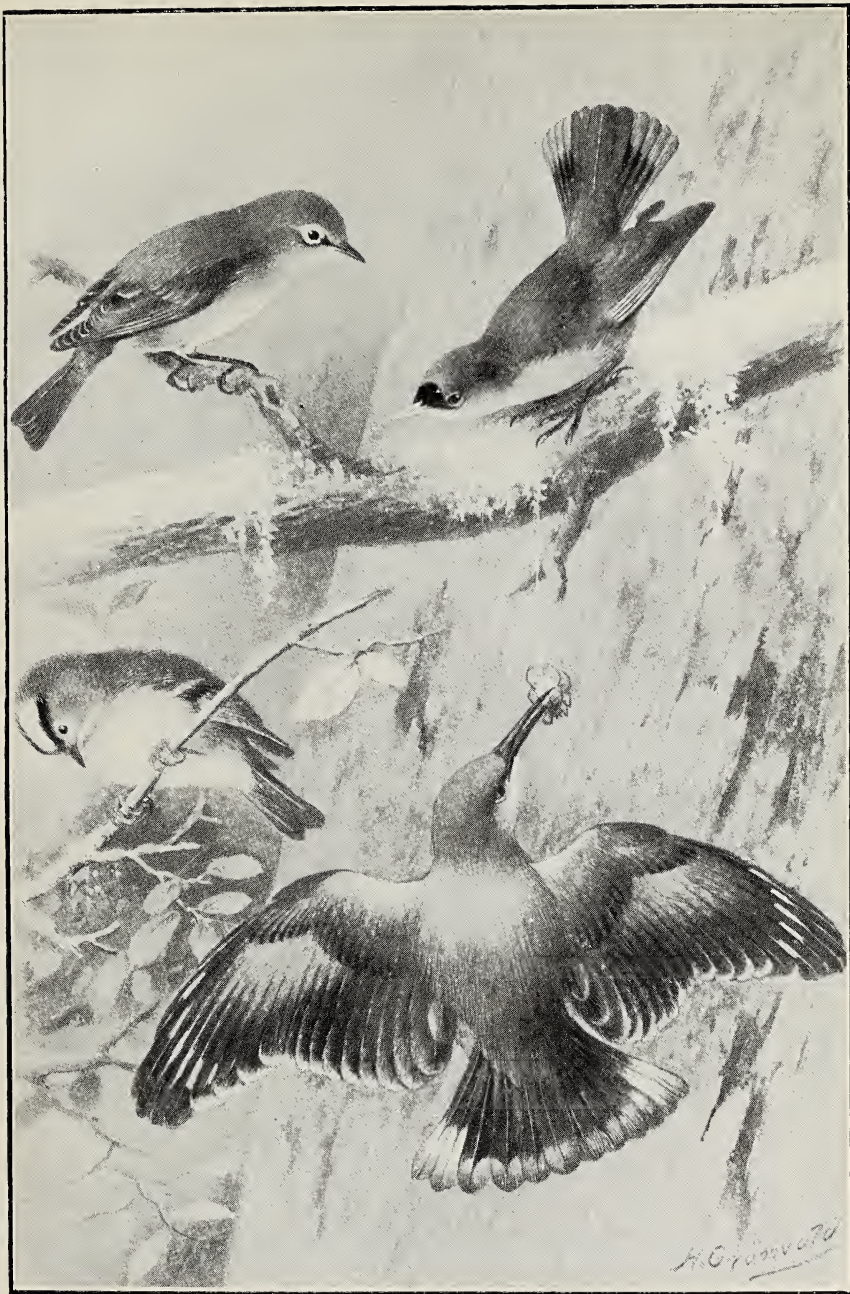
The Nightingale (*Luscinia megarhyncha*), king of songsters, wears a very sober costume ; russet on the back, whitish on throat and belly, darker on the sides, wings and tail reddish brown. It is difficult to distinguish the sexes, except in the breeding season when the male genital parts are very much developed. This, together with the song, is the only certain distinctive mark. The Nightingale, which comes to us with the fine weather, chooses woods, shady valleys, and flowery spots to dwell in. There he marks out his own territory and waits for a mate, and the pair then busy themselves with their nest. It inhabits Europe and North Africa.

For lovers of music the Nightingale is the favourite. But the finding of a perfect songster is quite a matter of chance, for it is a capricious bird. To buy a Nightingale is a lottery ; young ones taken from the nest never make the best songsters, not having graduated in Nature's school. The true Nightingale-lover must catch his bird himself. This is easy, as the cocks arrive first and sing while waiting for the hens to come over. Thus one may be certain of having a cock, and can choose him from among all the songsters around him.

A Nightingale's cage should be entirely shut in at bottom and roofed with dark canvas ; when first caught, the other sides should be entirely covered with green baize. It is desirable that the food and drinking vessels should be so placed as to avoid the necessity for putting one's hand inside the cage (some German cages are wonderfully well adapted for the needs of these kinds of birds). It is desirable to decide beforehand on the most suitable place for the cage, for once in position it does not do to disturb this capricious bird while he is in song. The food should consist at first of fresh ants' eggs and mealworms. Later on the bird can gradually be accustomed to the mixture which will eventually form its chief food.

II. STONECHATS AND WHEATEARS

These two groups are represented by pretty birds which are much alike in their habits and food. Stonechats are met with in fields and cultivated spots, but Wheatears prefer uncultivated stony places or



INDIAN WHITE-EYE
(*Zosterops palpebrosa*).

GOLDCREST
(*Regulus cristatus*).

VELVET-FRONTED BLUE NUTHATCH
(*Sitta frontalis*).

WALL-CREEPER
(*Tichodroma muraria*).

ploughed fields, but they are alike in their way of living. Both are fond of perching on salient points, the Chat chooses a bare bough of a bush and the Wheatear perches on a stone or a clod of earth. In captivity they delight their owner by their handsome plumage. They require great care and at first are very wild ; on the other hand, young birds taken from the nest become charmingly tame. They must have a food that is very rich in insects, but some kinds of berries please them. There are many species in Asia and North Africa. I will name the commonest in Western Europe :—

The Whinchat (*Saxicola rubetra*) has plumage in which blackish brown and rust colour predominate ; the eyebrows, lower portion of the cheeks, throat and sides of the neck are pure white, as well as a large oblong spot on the wing. The female is like the male, but is more russet, and the white is replaced by a yellowish tint. It is a common bird with a fairly sweet song. It summers in Europe and winters in Africa.

The Stonechat (*S. rubicola*) is a little smaller, and is prettily marked with cap, breastplate, and tail black, the breast and sides red brown. The female is blackish brown with a pale rust-coloured breast. It has the same ways and inhabits the same spots as the preceding.

The Wheatear (*Ænanthe ænanthe*). The male is blue grey with eyebrows, forehead, throat, and the middle of the abdomen white, a wide deep black stripe proceeds from the beak, surrounds the eyes, and ceases at the nape. The female is ashy brown above, and light rust colour beneath. This Wheatear is particularly fond of waste places or ploughed fields, where it loves to perch on a large clod of earth. In captivity it remains wild and unfriendly for a long time. It is found throughout Europe and in parts of Asia and Africa.

The Black-eared Wheatear (*Æ. hispanica*) has the crown, the upper part of the neck and body, the breast and abdomen more or less rusty white ; the cheeks, throat, wings, and most of the tail deep black. In the female the white is more rusty and the black is replaced by darkish brown. The male is a very beautiful bird in confinement. It is found in the south-west of Europe and winters in Africa.

The Pied Wheatear (*Æ. melanoleuca*) is also called the Great Wheatear, for it measures 19 cm. It is entirely black except the upper and

lower tail coverts, which are pure white, as well as nearly all the tail feathers. It is shy and very wary, and its habits remind one of the Rock Thrush or the Blue Thrush. Like these birds, it leads a solitary life, perching on a rock and remaining stationary for a very long time. It inhabits South-Western Europe.

THE TREE-CREEPERS, NUTHATCHES, AND WRENS

By J. DELACOUR and M. LEGENDRE

The Tree-creepers (*Certhiidae*) remind one a good deal of the Sun-birds by their long, thin, and curved beaks, but their tongues are simple and pointed, without a brush, and their feet are adapted to hold on to the trunks of the trees. They are wholly insectivorous.

Everybody knows the Tree-creeper (*Certhia familiaris*), which, with its different varieties, inhabits the whole of the northern hemisphere ; it is a small grey bird, striped with brown.

The Wall-creeper (*Tichodroma muraria*), which is found in the mountains of Europe and of Asia, is one of our prettiest birds ; it is grey, shaded with black, with the wings marked with bright carmine.

Both have been kept in cages, but this demands a skill which cannot often be repeated. Mr. E. Plocq writes us on the subject of these birds as follows :—

“ The Tree-creepers are, in my opinion, the most difficult to preserve of all the small birds (after the Swifts, however). I was never able to keep them through the winter. I give them meat powder, which I mix in equal parts with white cheese and fresh ants’ eggs. With this food the Creepers maintain good health, but when there is a shortage of fresh ants’ eggs they die. Neither dried ants’ eggs well softened nor mealworms can replace them.

“ I only once possessed a *Tichodroma*, having captured the adult myself at the end of October ; I kept it until the end of May. It would never eat insectile mixture ; I fed it exclusively on cockroaches and mealworms. It died at the moment when ants’ eggs were about to commence or I should certainly have been able to keep it during the whole year.”

However, in England and in Germany the Wall-creeper has been kept in a cage for several years ; it was given, in addition to insects, insectile mixture and minced meat.

NUTHATCHES

The Nuthatches are thickset, vigorous, and active birds ; their characteristics are somewhat intermediate between the Woodpeckers and the Titmice. They are fairly common and more resident than migratory ; they live alone or in pairs, but never in flocks.

Splendid climbers, the Nuthatches are perhaps still more skilful than the Woodpeckers, because they show as much facility in climbing along the trunk of a tree as in descending and stopping head downwards to catch an insect or to open a seed.

The Nuthatches are found everywhere except in Africa and in South America. The European Nuthatch (*Sitta europaea*) inhabits Scandinavia and the North of Europe ; the Buff-breasted Nuthatch (*Sitta corsia*) is found over all the rest of Europe ; the Whitehead's Nuthatch in Corsica. In the East of Europe there are two other species, the Krueper's Nuthatch and the Syrian Nuthatch ; this latter builds a very remarkable nest.

It is therefore the Buff-breasted Nuthatch which is found in the West of Europe, where it is widely distributed in our gardens and our woods. This bird never seems to have any rest ; it does not lose a minute in visiting, without stopping, all the trees of an orchard. It often commences with the upper branches and, trotting along like a little mammal, it finally arrives at the bottom of the trunk, and takes flight to a new tree.

Being very cautious, the Nuthatch usually has several hiding places where it deposits nuts and beechmast ; it is often a crack in a tree which is found to contain a regular row of nuts. It makes its nest in the hollow part of a tree, and reduces the opening to its own size by means of masonry work which it shapes with its sticky saliva. When this work is once finished, it is very solid.

The well-known plumage of the Buff-breasted Nuthatch is bluish-grey above, fawn below, with the throat and the cheeks whitish ; a black line, starting from the beak and passing across the eye, stops

at the neck and separates the bluish-grey of the upper parts from the reddish fawn of the lower parts.

The Nuthatch consumes a large quantity of insects, but during the cold season it adds all kinds of seeds to its diet. In captivity its gaiety, its agility, and its cleverness in hiding its food are its principal qualities. It must not be enclosed in a cage made of too soft wood, as this would not resist the strength of its beak, because, like the Woodpeckers, it has the habit of pecking continually. Its food must consist of insectile mixture, bread and milk, with walnuts and hazelnuts; it is also very fond of grains of oats, sunflower seed, and hemp seed, which it takes in large quantities in its beak and arranges them in rows in the cracks in its cage in order to break them. It requires a hollow log to spend the night, and one should put at its disposal branches covered with bark.

The Nuthatch is a fighter, and it is advisable not to associate it with little birds. As a rule two males should not be put together; they would soon kill each other.

Some exotic Nuthatches have been imported into Europe; they do not differ as regards their habits from our native species, and require the same care in captivity.

The Indian Nuthatch (*S. cinnamomeiventris*) is bluish grey on the back, brown below, with a black line starting from the beak, passing by the eye and finishing at the shoulders, the cheeks and the chin are white. The *S. castaneiventris* of the Himalayas only differs from it by its smaller size.

The Black-fronted Nuthatch (*S. frontalis*), which is found from India to the Philippines, is a lovely bird, blue above and a pale rosy brown below, with a white throat, the forehead and a stripe on the sides of the head black.

THE GOLDEN-CRESTED WRENS

The Golden-crested Wrens are the smallest birds in Europe; they owe their name (Roitelets—Kinglets) to the pretty crown of feathers which they carry on the head. They are gentle, alert, and graceful, and in many respects resemble the Tits; like them, they are of wandering habits. They feed entirely on small insects, larvæ, and insect eggs, which

they pick up, continually uttering a little shrill call note ; but they also have a very gentle and agreeable song.

Like the Tits, the Golden-crested Wrens specially frequent fir and pine forests. Except in the breeding season, they always live in the company of their kind, and when the winter has come, when the birds collect together in bands to search for food, the Wrens join the Crested and Cole Tits ; sometimes one or two Creepers join this group and sometimes also a Nuthatch. Nothing is more interesting on a winter's day than to follow with the field-glass the movements of such an association of birds. The Golden-crested Wrens build a nest which is very difficult to find, and is often situated at the end of a long pine or fir branch.

In captivity these birds require a lot of care ; they are delicate and only with difficulty become accustomed to a new diet. Several of them must always be kept together, isolation appears to be fatal to them. Their food consists of a very good insectile mixture, a paste which must be very fresh and to which one should always add mealworms cut into fragments or whole, but in the latter case, very small. During the summer months, one should also give them fresh ants' eggs and especially flies. Mr. E. Plocq advises as their diet a paste composed of meat powder to which half the quantity of heated cream or white cheese is added, with a little very ripe fruit crushed, and in addition very small mealworms cut into fragments and a lot of greenfly when obtainable.

The Golden-crested Wrens should not be kept in a large aviary, from which they always endeavour to escape by any opening, abandoning the places where their food is found ; but a cage of medium size is suitable for them with one or two branches of pine on which they perch with pleasure ; they roost there every night close up against each other.

Two species of *Regulus* inhabit Europe, and one sub-species is found in Corsica. The first is the Golden-crested Wren (*Regulus cristatus*), a small bird about 10 cm. long ; its plumage is greenish, with the head surmounted by a crest of bright orange-yellow, framed with black feathers. The female has a light yellow crest and less bright colours.

The other species, the Fire-crested Wren (*Regulus ignicapillus*),

is approximately of the same size and colours as the preceding bird, but is distinguished from it by its black rudimentary nasal feathers and two white streaks, the one above the other, below the eye and separated by a black line. It is much more delicate in captivity than the Golden-crested Wren.

The American Wren (*R. satrapa*) resembles the preceding bird, but its crest is of a brighter red ; it inhabits North America.

The Ruby-crowned Wren of Pennsylvania (*R. calendula*) is distinguished from the foregoing birds by its red crest not surrounded by black. It is found in America, from Greenland to Guatemala. All these species have been kept in cages in Europe.

SCENES IN THE LIVES OF TWO EAGLES

By FREDERICK D. WELCH, M.R.C.S.

A large collection of Indian birds was brought to London in 1920, and among them were two Eagles which were finally labelled Fishing Eagle (*Haliaetus leucoryphus*).

One scene in their lives has been already mentioned by me in the AVICULTURAL MAGAZINE for 1921, pp. 111–12, when they showed some hostility to each other one day during August, 1920, both Eagles facing each other, the feathers on throat and neck raised in excitement, eyes glittering, and wings partly raised ready for flight in attack.

Some people think that birds of prey are not interesting to observe ; but, for my part, the cages containing them have had a special attraction for me for some years—more so than those where Finches and such birds are—and therefore some observations made since the aforementioned scene may be worth adding to the above.

As previously stated in the AVICULTURAL MAGAZINE, 1921, p. 112, these two Eagles seem to me to be male and female.

One sunny morning in July, 1921, the bird which looks smaller settled after a flight in a posture which was an interesting one to see, because no Eagle either of this genus or any other one seen alive by me has clung in such a position.

Both Eagles had been very active in flight about their cage for

several minutes when the smaller bird, seated on the floor, flew upwards and flapped about the cage for several seconds, and then caught hold of the network forming the roof part of its cage with the claws of both its feet.

There it held on for about forty seconds, its legs separated somewhat from one another more than when sitting in normal upright position, its head and body hanging, therefore, *upside down* !

Seeing it in this unusual clinging position recalled to mind at once the peculiar position which is usually and normally chosen by the small Hanging Parrots of the genus *Loriculus*, which curious creatures sleep—as members who observe Parrots are aware—hanging by their feet head downwards from a bough.

The Fishing Eagle differed, however, from such Parrots seen by me in earlier years in that, during the time it clung upside down, it was frequently moving its head and neck about and looking around the cage beneath it, evidently on the look out for another position to fly to.

After a little while, it suddenly let go its hold and dropped, turning in flight into an upright position during its aerial course, and settled on the floor.

The scene showed that Eagles of this species can hang without difficulty with their toes ; for instance, they may cling to another Eagle with which they may be fighting in aerial combat when in a wild state. To pass on to the next scene of interest witnessed between the two *Haliaetus leucoryphus* in the Zoological Gardens ; this occurred in August, 1922. The summer of that year was, on the whole, a cold and wet one ; but one afternoon in the month above mentioned, the sun came out shining, and it was a nice warm afternoon—a pleasing contrast to previous days.

The two Eagles spent the hours I watched them in very different ways—the one flying about the large cage exercising itself, the other sitting quite still at one end of the perch in an attitude which showed it to be almost, if not quite, asleep.

After one flight, the smaller Eagle flew towards the motionless one, and settled very suddenly on the perch close up against it, so that it half-collided with its sleepy companion, shaking the latter

and making its foothold on the perch unsteady owing to the force of the collision !

This, of course, immediately made the larger Eagle awake and the method by which it restored its balance and regained a sure foothold with its toes on the perch was interesting to see.

Personally I expected to see it expand its wings and flap them while endeavouring to prevent its grasp of the perch being loosened any more. But this it did not do, keeping its wings just as when in the sleepy state previously. The tail was expanded very widely—what looked to me to be the fullest expanse possible in a live bird—and with a few rapid movements of these feathers in various ways (too complicated to describe on paper), the Eagle completely restored its balance after wavering unsteadily on the perch for about four seconds.

Having witnessed the angry scene in August, 1920, referred to in the opening sentences of this account of their doings, I expected the Eagle which had been awakened by such an unpleasant shaking would get angry and attack its companion who flew up against it ; but here again matters went differently to what was expected, because the larger Eagle, after gazing at its companion for about a minute, settled down again in its sleepy attitude, just as it had been before being flown into !

The action above referred to seemed to me to demonstrate that the tail feathers in these Eagles are certainly of as great importance as the wings are in balancing during sudden turns or movements during flight—possibly even more important judging from the fact that the tail alone was used by this Fishing Eagle to restore its balance. In this connexion it seems to me that Eagles which hunt fish (as these *H. leucoryphus* do) have to move at times very suddenly when making a dash at them, because some fish only show to the view of the Eagle on certain occasions for a very few seconds indeed before disappearing too deep below the surface of the water for an Eagle to reach them ; therefore, a Sea Eagle hunting over sea, lake, or river, has occasionally to change its course of flight at very very short notice if it is going to be successful in catching that particular fish. On the other hand, mammals which are preyed upon by true Eagles are exposed to the bird's view for longer periods than fish—for instance, hares chased by Golden



Photo by W. H. Bustin, Hereford.

Mr. Astley with his Trumpeters.

[To face p. 72.]

Eagles and small antelopes by the Eagles of *Spizætus* genus in Africa—and so it seems reasonable to think that sudden movements and sudden dashes at prey are more often made by Sea Eagles than by the genera *Aquila* (true Eagles) and *Spizætus* (Hawk-eagles), and the tail to them therefore is very useful indeed. When considering dashes at fish as just mentioned above, it is interesting to notice how wonderfully well the legs of Fishing Eagles are adapted for such purposes by having the metatarsus above the toes bare of feathers!

After an Eagle has dashed its limbs into sea, lake, or river, and grabbed a fish in its toes, the water easily runs off when the Eagle rises again in flight towards land to eat its prey, and is no hindrance to rapid rising into air. Legs which were heavily feathered, as in true Eagles, and to lesser extent in Hawk-eagles, would retain the wet longer, and therefore be less suitable for the birds' method of getting its usual prey. The above mentioned is the case not only with the species here considered, but applies of course to others in the genus *Haliætus*.

As regards voice, both the *Haliætus leucoryphus* in the Gardens are very noisy birds; and their voices are similar which, if the diagnosis that they are male and female be correct, shows that wild birds cannot be distinguished, male from female, by voice alone.

The sound which is uttered most commonly is a rather quiet one for an Eagle, and is like "cack, cack, cack," etc., during which the mandibles are held wide open and there is some bulging of the skin at the extreme upper part of the throat as long as it is continued, which is sometimes for several minutes without any stop.

Another sound is like "hock, hock, hock!" uttered in bass voice; but this is very much louder than the other—more like a bass screech.

There are also other sounds louder than the one first mentioned, but so like each other when heard by human ear that I cannot describe them in words approaching accuracy. It may not be out of place to compare the voices of these birds with the Sea Eagle from Corea (*Haliætus branickii*), mentioned by me in the AVICULTURAL MAGAZINE, 1920, p. 55, because the latter species is not often, according to my experience, brought alive to Britain.

On many occasions I have watched this magnificent bird, and

while, on the one hand, it was a quieter bird than the *H. leucoryphus* because these call oftener and keep it up for a longer period, the *H. branickii* had, on the other hand, a voice which was very much louder when it did use it, and could be heard a much further distance away. The screech was twice as loud, if not more so, than that of *leucoryphus*. Its squeal was also louder than that of these Indian birds; and, it may, perhaps, be added with advantage, than that of any White-headed or White-tailed Sea Eagles yet seen alive by me.

In 1920-1 the *H. leucoryphus* were brown in plumage and iris, beak blackish, legs yellowish; but during the latter half of 1922 the tails became lightish grey with broad black tips. When the wings are folded, most of the grey is covered, but about one inch can be seen when viewed from behind.

HOW TO KEEP INSECTIVOROUS BIRDS IN PERFECT CONDITION

By P. F. M. GALLOWAY

(Continued from p. 51)

THE WOOD WREN (*Phylloscopus sibilatrix*)

This bird is a lover of oak and beech woods, and I don't remember ever finding it elsewhere.

A pair will select some corner of a beech wood for its breeding haunt, as often as not near a footpath or old cart-road or timber track.

They are far less numerous than either the Willow Wren or Chiff Chaff, and it is seldom that one finds more than a couple of pairs in one wood. I have never found them even in an underwood, but always in beech and oak woods.

The nest is built right on the ground, sometimes under a small piece of bramble, at other times on the bare leaves that have fallen the previous autumn without any grass or brambles to hide it: even then it is difficult to find, you may stand over the nest and notice only a small portion of leaves and dead grass raised up, as if a mole in working underground had hunched its back up and had thrust up a portion of the dead leaves in doing so. This is the nest, for if you turn your

head sideways you will at once see the entrance to the nest, which is on the side, for it is of the domed type.

The inside is always lined with dry grass as fine as horsehair, no feathers being used.

When near the nest the birds fly round, sometimes within a few feet of you, uttering their call note which is a rather drawn-out, mournful "Tweet, tweet!" uttered at short intervals; the bird is very bold during the nesting season, and will come quite close to you.

In the end of April or first week in May the bird arrives, and it is rather difficult to catch sight of it until it moves, although it may be but a short distance from you; this is on account of the leaf and bird being so much alike in colour. I call the Wood Warbler a most beautifully coloured bird. I have heard people say they have been unable to tell the Willow Wren and Wood Wren apart in the wild state: all I can say is, the Willow Wren and Chiff Chaff are not to be compared with the former species for colour. The Wood Wren is a beautiful beech-leaf green all over, the upper parts with a bright sulphur yellow superciliary streak over the eye much broader than in the Willow Wren. The chin and throat also sulphur yellow, its breast and under parts, including under tail-coverts, almost pure white, the wings are dark, edged with bright yellowish green, as also is the tail. The wings are very long, reaching when closed to within about a quarter of an inch of the end of the tail.

In the spring, when they have been here a few days and before the hens arrive, I have fetched the bird down within a few feet of me by imitating the call note "Tweet, tweet", the bird appearing annoyed at not finding the other (human) bird uttering the "Tweet, tweet".

They have a peculiar habit in the early part of the spring in regard to flight; instead of flying in an undulating manner from one tree to another, they will fly very slowly in a slightly zigzag way, very much like a bat uses its wings.

When singing they raise their head slightly backwards and produce their shivering song of zit, zit, zit, slowly at first, then quicker until the end of the song is extremely rapid, the whole body seems to shiver or shake in the effort to produce the notes.

It is wonderful how these birds live through a long spell of drought;

no matter how dry the season I have always been able to find any particular pair of Wood Wrens at all times, and I have known all the ponds dried up and no water anywhere within reach of the birds; whether they find the morning dew (when there is any) sufficient, I do not know. This has often struck me in regard to other species that inhabit woods only, and never appear to leave them: one can understand birds like Woodpeckers and Starlings that use holes in the trees in woods for nesting, and then fly distances away, they do have a chance of finding moisture; but, with other species who do not move away, it is wonderful to me how they survive a long spell of drought.

The young are almost as bright in colour in the nest as the adults: it is a picture to see perhaps half-a-dozen bright coloured little Wood Wrens with heads all pointing towards the entrance of the nest.

The adult birds will rear their own young in captivity, feeding them within half an hour of being put into the cage, and so will many other insectivorous birds, provided the food at first given is that which they have been feeding them on in the wild state, afterwards substituting cut-up mealworms and fresh live ant cocoons. They will rear their young perfectly and become themselves very tame in an extraordinary short space of time. The cage used being roomy, with a few green boughs put in and green moss all over the drawer board, they will keep the nest perfectly clean and behave exactly as if outside.

The food of this species when kept should be exactly the same as that provided for the other previously mentioned species, with the exception of fruit and berries, which they do not partake of.

The cage should be like that used for the Blackcap, but can be slightly smaller.

There is nothing to recommend this species as a cage-bird, except its beautiful and delicate coloured plumage, the song not being of high order.

One curious thing about this bird is that it can be heard and seen any time whilst it is rearing its young, but as soon as the young are large enough to look after themselves not a sign of the adult or young nor a sound of them can be heard in any woods or any of the surrounding country. They appear to clear right away, and are not seen again

until they arrive in the following spring, at any rate that has been my experience of this species, quite unlike other migrants that can be heard or seen somewhere in their old haunts. No matter how many Wood Warblers I have known the haunts of, it has always been the same every year.

PHEASANT BREEDING

By J. DELACOUR

It seems a curious fact that although Great Britain has always been the leading country for most forms of aviculture, yet rare Pheasant breeding has never been very successfully carried out on the northern side of the Channel, while it has been most flourishing in France for nearly a century.

This is even true now. There are no big collections of Pheasants in England at present, while in France and in Italy a few very important collections and many lesser ones exist. Moreover, there are also numerous persons of small means who breed fancy Pheasants for profit and do well on it: clergymen, schoolmasters, and small officials have always been very successful at it.

I have always had a great fondness for Pheasants; they are such gorgeous birds! If the wild and timid temperament of many is a real drawback, yet the interest of breeding young ones makes up for it easily.

Since 1905 (and I was quite young then) I have kept a large number of Pheasants. Up to 1918 my pheasantry in Picardy was flourishing, and its destruction was not only a terrible blow to me, but also to aviculture in general, as with it disappeared some of the last specimens in Europe of such rare birds as the Mikado, Sœmerring's, Vieillot's, and Wallich's Pheasants, which have never been bred since.

As soon as the war was over I set to work again, and succeeded in gathering a nice lot of birds.

Perhaps a few lines on the accommodation that I have here might be useful to some members.

For newly imported or sickly birds I have a few indoor heated aviaries, which are necessary but seldom used for any length of time.

Further, I dispose of a dozen roomy flights (from 50 to 150 square

feet) with heated shelters for delicate species such as Argus or especially valuable birds in their first winter. I find that almost all the Pheasants can stand their *second* winter in a cold shelter and often even out of doors, but they need care the first one. The majority of my other pens are scattered in groups of 6 to 10 in different spots in the park; they all have grass, plenty of bushes, and a small wooden house, the whole thing as natural as possible. Each pen is separated from the next one by concrete slabs ("fibro-cement") 2 ft. high, so that the birds cannot fight or be disturbed. These pens are as large as possible, from 150 to 400 square feet. All Pheasants' pens must be wired over; other fences are never safe, even with pinioned birds; I must confess that I still have some uncovered pens, but I only keep in them common species.

Feeding is of great importance: fertility depends a great deal upon it; in the spring, heating food is necessary, and fattening stuff such as maize must be given with great precaution.

To avoid failures it is necessary to know that while you can (and it is better) put several hens to one cock in some genera, you would undoubtedly never get a fertile egg if you did so with others. The following groups of Pheasants are polygamous in captivity: Jungle-fowls (*Gallus*), True Pheasants (*Phasianus*), Long-tailed Pheasants (*Lyrnaticus*), Reeves', Elliott's, Sœmerring's, Mikado, Golden, and Amherst Pheasants. Those which *must* have only one hen are: Tragopans, Monauls, Polyplectrons, Crossoptilons, Firebacks, and Kaleeges; this includes Silver and Swinhoe's Pheasants, in fact, all Crested Pheasants except Golden and Amherst's.

Eggs should be collected daily and put under Bantam hens within a week.

The chicks are first kept in coops and runs and soon allowed liberty (while the foster-mother remains a prisoner) in a field well away from where old Pheasants or poultry are kept.

When three months old, young Pheasants must be caught up and put into aviaries.

Rare species, to avoid any accidents, we rear in a field covered in with wire. Of course, the coops should be rat-proof and the birds shut in carefully at night.

Food for young Pheasants is not always easy to provide, and varies according to species, locality, weather, etc., but the fare should always include ant cocoons and custard.

Just now my collection is fairly good, and I have great hopes for the coming season. I have several pairs of the following species: Red, Java and Sonnerat's Junglefowls, Chinqué's and Germain's Polyplectrons, Mountelussion Crossoptilons (or Ho-Kis), Monauls, Temminck's, Cabot's and Satyr Tragopans, Golden, Amherst's, Reeves', Elliott's; Silver, Lineated, Black-crested Kaleege; Horsfield's and Swinhoe's Pheasants; Siamese, Bornean, and Crestless Firebacks; but my best birds are two pairs of Argus, two pairs of the rare Bel's Pheasants from Annam, and three pairs of Edwards' Pheasants, a bird which was only known by four skins before I went to Annam this year. The pearl is the unique pair of the Imperial Pheasant, a fine all-blue bird, which I have just discovered in North Annam.

THE GREY-HOODED GROUND DOVE (*GALLICOLUMBA RUBESCENS*)

In the year 1813 a Russian ship's captain named von Krusenstein visited the Marquesa Islands, and on his return to St. Petersburg the following year produced a somewhat crude drawing of a small Ground Dove which he had obtained in the mountains of the island of Nukuhiva, one of the Marquesas.

In 1918 the naturalist Vieillot described this bird from the illustration, and named it *Columba rubescens*. His description in French is printed as a small-print note in the B.M. Catalogue, vol. xxi, p. 606, where it is placed in the genus *Phlogœnas*.

Nothing further was heard of this species for more than a hundred years.

In 1920, through the generosity of Mr. Harry Payne Whitney, an expedition was organized by the American Museum of Natural History to conduct ornithological field work in eastern Polynesia, under the leadership of Mr. Rollo H. Beck, and amongst other birds collected in the Marquesas was this lost Dove, as was discovered

when the collection was worked out in New York by Dr. Robert C. Murphy, of the American Museum of Natural History. A good series of skins was obtained, not from Nukuhiva, from which it appears to have vanished, but from the islands of Fatuhuku and Hatutu.

In addition to the dead specimens, some living birds were brought home for Mr. E. W. Gifford, of Oakland, California, in whose aviaries they very soon bred. Some of the young were apparently sent to the Bronx Park, and the Zoological Society of New York, with their usual generosity, have presented a specimen to the Zoological Society of London, and this is apparently the only example, alive or dead, in existence outside the U.S.A. and the Marquesa Islands.

It is a rather small Dove with somewhat long legs and may be described as follows: Head, neck and breast grey; the remainder of the under surface, as well as most of the upper surface, fuscous-black; the feathers of the upper back scapulars and lesser wing-coverts broadly margined with iridescent violet-purple; middle back glossed with dark green. The quills and tail-feathers have the proximal half white, the terminal half black, the white being a very conspicuous feature during flight, though invisible at other times. Legs and feet are reddish-black.

D. S-S.

A SMALL AVIARY AND SOME GADGETS

Having moved, it was of course necessary to build an aviary for my small stock of common foreign birds.

The only site available unfortunately faced north, and was on a slope. To make the best of this required thinking matters out for a time, as I wanted to visualize the complete erection before starting to build.

Finally, a stout, open-fronted shed with span roof was bought in sections and erected on dry bricks. A low wall of breeze slabs coated with cement was laid in a concrete-filled trench all round inside the shed and across the open front and this was filled with coarse gravel rammed hard and covered with 6 inches of builders' sand. This provided a dry shelter, and any incursions of rats from below would

be at once apparent in the loose sand. One part of the shed was boarded in, except for a narrow doorway at the back, so that a cosy draught-proof place was available for severe weather. A window was placed in this for light, but was not of clear glass but translucent only. For the open flight the space remaining was sloping and the shape of a right-angled triangle, based on the open front of the shed.

Obviously the water pool and the door must be at or near the apex of the triangle, so a hole was dug about 2 feet square and the same deep, and filled up nearly to the ground-level with broken pots, slates, china, etc., with a 2-inch pipe set in the middle. A layer of rough concrete round the pipe, followed by cement, made a pool with the outlet pipe level with the bottom and the depth varying from nothing to 4 inches over the pipe. A rubber bath-plug screwed on a stick and the thing was done, and the pool could be emptied, scrubbed clean, and refilled in no time. In the last layer of cement small round pebbles were set to give a better and more natural appearance. To catch early and late sunshine over high hedges it was necessary to have the roof of the flight at the apex of the triangle as high as possible, so the door was put here also. A low door with a high peak of flight over it at the narrow end of the flight was thought the best scheme for avoiding escapes when entering, as any birds near the door would fly up and back to the wide end of the flight. This has proved perfectly successful. To make it clear please get a scrap of paper and draw a rectangle, lettering it ABCD. The back being A-B and the open front C-D.

On C-D (remember your Euclid) make a right-angled triangle, CDE. CE being a continuation of AC, cut off the point at E leaving a narrow end only, and parallel to CD. That gives you the ground plan, and saves our magazine from the cost and space of an illustration. I have not put in the enclosed part of the shed ABCD, mentioned earlier. The narrow end at E is the door and the flight runs up to a high peak at E over it. To get over the difficulty of the slope down from the shed, rough bricks and bits of breeze block were used to terrace up the slope into three broad, shallow steps, part of which was used for planting a small tree or two, part for a narrow path, and part

covered with sand, or a patch of grass and weeds if room enough. The lower part of the sides of the flight was constructed of rough walling made with breeze blocks (cement washed) and rough stones set in cement mortar, all being on a trench filled with concrete to keep rats from burrowing under. The rest of the sides and the top was of the usual wire netting and stout creosoted batten construction. One valuable tip for this or chicken-run construction: have the hinge-side post of your door of heavy square hardwood set in cement, or better, in concrete. It saves your structure from straining when the door is opened. In fact, I had both the door posts of this sort, and consequently the whole structure is rigid. Paint your wire-netting well. Being on a slope the question of drainage solved itself except for the final exit of water under the door. I made the inner doorstep with a bottom layer of concrete, then a layer of broken glass, pots, odd clean stones, etc., and then by covering this with a piece of sacking I finished off my "sandwich" with a layer of fine concrete. The water therefore drains through the middle layer of the sandwich, which is of course perfectly rat-proof, and out under the door, but there is nothing visible of this middle layer except at the end where it is exposed under the door. I hope this is clear.

Perches and nest-boxes were fitted as convenient, taking care that the full length of the flight was kept as free as possible. A shelf in the high peak over the door at E is much appreciated. Seed hoppers were hung in the shed clear of the sides and by a single wire, as it is almost out of the question to keep out small mice, although half inch wire seems too small for full-grown ones to pass. The shed was largely lined with brushwood, tacked on, and the inside coated with light green washable distemper. Branches were also fixed in the apex of the span roof for roosting purposes.

That is my little aviary, and it is a success. The birds get all the sun there is, and the flight being 9 feet high at the apex or door end and 6 feet high at the shed end, they have plenty of room. It was made in three months, in spare time only, and working single-handed. Note, it is advisable when using breeze slabs for outdoor or exposed work, to coat them with a thickness of cement wash, otherwise they will absorb water, and when a frost comes they will split and crumble.

Also they look better, and if the cement is put on thickly in lumps, so much the better for appearance and for utility.

If possible get that creosoted battening which is sold for edging garden beds as it is creosoted to the heart under pressure instead of being just painted over with preservative. It will last a lifetime off the ground.

If really troubled by rats half-inch wire netting laid all over the ground space and covered with 6 inches of sand or dry ashes will be useful, provided the edges are made safe with concrete.

W. W. S.

CORRESPONDENCE

THE WHITE-BELLIED ROBIN (*Miro albifrons*)

SIR,—In the special article on the Flycatchers by J. Delacour, that writer refers to the Red-headed Robin (*Miro australis*) as occasionally seen in European collections. Several years ago, somewhere about the period 1902 to 1905, there were in the Western Aviary of the London Gardens two charming-looking birds labelled White-bellied Robins, (*Miro albifrons*). So far as I now remember they came from South Island, New Zealand, and were in general colour a slaty-grey with white breast, belly, and vent, and were rather large in size.

Whether the species is commonly imported I cannot say ; but as they were nice birds and had the same generic name as the Red-headed Robin, and presumably closely allied to it, I thought it might be of interest to mention them. They had a twittering song, so far as I now remember.

FREDERICK D. WELCH, M.R.C.S.

BREEDING OF THE LESSER SULPHUR-CRESTED COCKATOO

SIR,—In view of a query in the current number of the MAGAZINE, a few further notes on my successful breeding of the Lesser Sulphur-Crested Cockatoo may be of interest.

My birds hatched a pair of young in the beginning of June last, and these left the nest in the first week of September and were capable

of flight from the start. Both old birds fed them for another month, when quite unexpectedly the male parent attacked them, tearing one of them literally to pieces. The other I rescued, only slightly injured, and placed in a separate aviary. It fed itself without difficulty on hard seed, and is now in perfect condition in every respect. The behaviour on the part of the father may, I think, be attributed to his desire to nest again and his consequent jealousy of the young birds. The young bird had a horn-coloured beak until Christmas, when it rapidly assumed a black tint.

My Cockatoos nested in a suspended tool-chest in an open-air aviary 35 by 16 feet, and 16 feet high, part of which is covered over. In the same aviary are some Doves, a Rosella, a Ring-neck, Cowbirds, Glossy Starlings, and several smaller birds. For some time I have been trying to cross Leadbeater's Cockatoo with the Roseate, but so far without success.

M. T. ALLEN.

CHEESE AS FOOD FOR BIRDS

SIR,—I find my Glossy Starlings prefer cheese to any other food, except of course mealworms. My Budgerigars were very fond of it also when they were breeding, but I don't think they eat it much now that I don't keep hens. Wild Robins, Accentors, and Sparrows also are very fond of it. It seems to suit them all very well, yet I have never seen it mentioned in any book, so it may interest your readers.

ALFRED THOM.

LONGEVITY OF SUGAR-BIRDS

SIR,—Several years ago, Mr. Hubert Astley gave me a pair of Purple Sugar-birds. He had them in 1912, and tells me they were then adult. Last summer I took the little female, and sent her to Mr. Galloway asking if he could tell me the cause of her death. He wrote saying the bird was in perfect health and condition; and in his opinion she had just died of "old age"! I still have the male bird, who flies in my birdroom all the year round; there is no heat, and the window is always open during the day-time in winter and night and day during the summer months. He takes a bath in cold water every

day, and is in perfect condition, and beautiful plumage. I shall be very interested to know if similar cases of longevity have been known in captivity of these exquisite little birds ?

G. KATHLEEN GODDARD.

THE BREEDING OF SAND-GROUSE

SIR,—Thanks to Mr. Meade-Waldo's ready help and information, I have been able to amplify my *Records of Birds which have been bred in Captivity*, and those referring to this family now stand as follows :—

626. PIN-TAILED SAND GROUSE, *Pterocles alchatus* (L.)

With Meade-Waldo this species "bred regularly from 1896 to 1914. From several pairs over sixty young were reared. They were bred from both the Eastern and Western¹ races . . . *Exustus* never eats green food, which is relished by the other species; and won't sit on grass, which is preferred by the others; it is also much more lethargic. The young of all species are very independent". Meade-Waldo in litt., Sept. 6th, 1924. See also *A.M.* 1906, 219; 1910, 133. One of his hens lived 17 years in captivity. They were also bred by St. Quintin; see *A.M.* 1905, 64.

627. LESSER PIN-TAILED SAND GROUSE, *P. exustus* (Temm.)

First breeder, St. Quintin in 1904, two young birds being reared. See *A.M.* 1905, 64, 118. They also bred regularly with Meade-Waldo "for many years. Quite different in habits to *Alchatus*". In all the species observed "The males sit all night and get water for the young by soaking the breast feathers at the drinking place and hurrying home, when the young suck off the water". Meade-Waldo in litt. as above. See also *A.M.*²

BLACK-BREASTED SAND GROUSE, *P. arenarius* (Pallas)

"Bred regularly with me and have the same habit as *Alchatus*." Meade-Waldo in litt. as above.

E. H.

¹ = *pyrenaicus*, Seebohm.

² The first two species are included in Page's List of Birds which have been bred in Captivity.

THE CINEREOUS TINAMOU

DEAR SIR,—In my account of the Cinereous Tinamou I regret that I made a stupid mistake. It appears that there are two Cinereous Tinamous in South America, *Crypturus cinereus*, that inhabits the northern part of the continent, and *Morthoprocta cinerescens*, which lives in the southern. I have now examined skins of both species in the British Museum, and no two birds could differ more, and one wonders why they were given the same trivial name. My birds are undoubtedly *Morthoprocta cinerescens*.

W. SHORE-BAILY.

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THE AVICULTURAL MAGAZINE

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THE TIMELIIDÆ

By J. DELACOUR

In Oceania, in Africa, and especially in Asia, a large number of insectivorous and frugivorous birds are found which approach pretty closely to the Thrushes and Warblers ; they are distinguished from these, however, by short and rounded wings, and frequently by a longer tail, thicker beak, and stouter legs ; their movements are rapid, and they move from place to place by large hops.

These birds are exceedingly numerous ; their size varies from that of a Warbler to that of a Jay, and one group differs considerably from another in appearance. Their classification is still doubtful.

These birds are known as the Timeliidæ, the most familiar type of which is *Liothrix*, or the Pekin Robin.

On account of their number and of their extreme diversity, we will divide them into five groups, which we will study separately. To begin with, we may state that all the Timeliidæ are excellent cage and aviary birds, lively and intelligent ; many have a fine plumage and some a very agreeable song. They are generally easy to feed, and content themselves with the ordinary diet of insectivorous mixture and fruit, with a few insects. The large species must be treated like Thrushes, the small ones like Warblers.

I. THE JAY-THRUSHES (*Crateropodinae*)

The Jay-thrushes, which are large Timeliidæ, live in flocks ; they are very noisy and full of curiosity. Their eggs, with very few exceptions, are blue or white without spots ; they are laid in nests in

the form of cups. They mostly feed on the ground, like thrushes, whose habits and diet they follow rather closely, although their shape and appearance remind one rather of those of the Jay. The males and females are alike. Their feet are very strong, and their heads more or less crested. Their voice is penetrating and singular, and they sometimes all start calling suddenly together, spreading out their crests, tails, and wings.

They are generally common in wooded regions. Certain species frequent gardens. I have frequently observed and captured them in India and Indo-China.

These birds are admirably suited for the aviary, where their activity and sudden movements make them very amusing. They are too large and too active for cages. They sometimes nest in captivity, but rarely rear their broods; most frequently the young are killed by the parents before leaving the nest.

Two Australian Jay-Thrushes which are very peculiar have appeared in European aviaries.

The Spotted Jay-Thrush (*Cinclosoma punctatum*) lives in the south-east of Australia. It is a bird which inhabits rocky gorges full of undergrowth, and it lives and nests on the ground; its flight is heavy. The male is brown on the back, each feather having a dark line in the middle; the wing coverts are bronzed black with white tips; the middle tail-feathers are green, the others black with white ends; head brown on the top, passing into grey on the forehead; eyebrows white as well as a large spot on the sides of the neck; parotic regions brown; round the eye, chin and neck, black; breast grey, bordered below with a black line; under part of body white in front, spotted with yellowish brown and black beneath. The female has no black on her head, on the throat, nor on the breast, nor any white on the neck; the wings and tail are greyer.

The Coach Whip Bird (*Psophodes crepitans*) is a very fine bird which is found in the east of Australia. The top of the body, the wings, the tail, and the sides are of a bronzed olive green; the head, provided with a big crest, is black as well as the breast; a large white mark starts from the base of the beak and runs along the sides of the neck; the abdomen and chin are white, spotted with grey. The female

is similar to the male. This bird inhabits forests and lives among the bushes and the creepers ; it feeds on insects which it catches on the ground. It is shy and very lively in its movements. The song of these birds is strange, and ends by a snapping sound like the cracking of a whip preceded by two gentle whistles ; the female takes part in this.

The *Dryonastes* are distinguished by their nostrils being covered and by the stiff feathers at the base of the beak ; they greatly resemble the Jays.

The Chinese Jay-Thrush (*D. chinensis*) is olive brown shaded with ashy grey, with a black head ; the cheeks are white. It is seen from time to time in aviaries. It is a very beautiful bird, a favourite with the Annamites, who frequently keep it in a cage.

I have just brought back from Annam some *D. lugens*, which differ from the preceding bird in having grey cheeks.

Three other species have also been imported : *D. ruficollis* from the Himalayas, olive brown with slaty grey head marked with white, the front of the neck, area round the beak and the throat, black ; the sides of the neck of rosy red ; *D. perspicillatus*, of Southern China, Indo-China, and Siam, brown with the head varying between grey and blackish ; it is very common in Annam in the bamboo hedges which surround the villages ; I have just brought back some specimens ; *D. cærulatus*, from the East Himalayas, reddish brown, black round the eyes and the beak as well as the chin and under the body, white.

The *Garrulax* are the most frequently imported members of the group. They only differ from the preceding species in the fact that their nostrils are less covered by the feathers of the forehead. They are in general larger and provided with well-developed crests.

The White-crested Jay-Thrush (*G. leucolophus*) is a superb bird, of the size of a Jay, brilliant olive brown, with the head, neck, and well-developed crest pure white ; a large black line passes over the eye. It inhabits the Himalayas and is replaced in Burma and in Indo-China by closely allied species (*G. diardi*). Its note is amusing and agreeable, resembling a peal of laughter.

It is fairly frequently imported, and is an excellent aviary bird, being very hardy.

The White-throated Jay-Thrush (*G. albigularis*), of the Himalayas and of China, is brown, with a pure white throat, and black round the eyes ; it reaches us from time to time.

The Black-gorgeted Jay-Thrush (*G. pectoralis*) is olive brown shaded with fawn, the end of the tail being white, a black line passing by the eye, and a wide black bar on the breast. It inhabits the Himalayas and Burma.

The Collared Jay-Thrush (*G. picticollis*) is tawny brown ; back of the head is dark brown, separated from the back by a band of orange red ; thin white eyebrows surrounded with black, face and neck yellowish white, surrounded by a black line ; sides of the neck greyish-blue. This *Garrulax* is higher on its legs and has a finer beak than the preceding ones ; it resembles in appearance the large Nightingale of Japan.

The *Ianthocincla* only differ from the *Garrulax* by the absence of the stiff feathers at the base of the beak ; their nostrils are covered by a few long hairs ; their secondary wing feathers end in white tips.

The Grey-headed Jay-Thrush (*I. cinereiceps*) of China is of a light olive brown, the eyebrows as well as round the eyes being of a whitish colour ; the top of the head ashy grey, as well as a line passing over the eye ; the cheeks orange coloured and a dark brown line passing from the beak above the cheek ; the primary wing feathers and the secondaries are olive green with a black spot terminated by a white tip ; the tail is similar.

The *Trochalopteron* have no hairs on the nostrils ; generally their wings are provided with a mirror of bright colour. Their size varies greatly, and the smaller species resemble the Timeliidæ.

The Red-headed Jay-Thrush (*T. erythrocephalum*) is olive brown above, tawny below, with a russet head ; the parotic regions, the breast, and the top of the back are spotted with black ; tail grey, tinged with yellow ; wings variegated bluish grey and yellow. Its habitat is the Himalayas. From the same region some other species have been imported, which are mentioned below.

T. nigrimentum is variegated russet and brown ; it is distinguished by the feathers of the cheeks and throat, which are black, bordered with russet. *T. lineatum*, which is very common in its native country,

has the head, the nape of the neck, and the back striated ashy grey; the lower part of the back and the wing coverts are reddish brown variegated with white; the russet tail has a subterminal black band and ends in grey; round the eyes it is white and grey; the cheeks and the eyebrows are chestnut; the chin, the throat, and the chest are maroon spotted with grey; the under part of the body is greyish brown.

T. rufigulare is of a general olive brown colour or russet spotted with black; the head is curiously marked with grey, russet, white, and black.

The Pekinese or Spectacled Jay-Thrush or Hoami (*T. canorum*) in form closely resembles the very large Nightingale of Japan. It was frequently imported some years ago under the name of Pekin Nightingale; it reaches us more rarely nowadays. This is the favourite cage bird of the Chinese, who esteem it for its sonorous and varied song and for its pugnacious disposition, which enables it to be employed as a fighting bird. It is of a chestnut brown, lighter below and on the rump, and lightly striped with black on the back; the eye is surrounded with white, which extends to the eyebrows.

The Striated Jay-Thrush (*Grammatophila striata*) is recognized by its short and thick beak, and by its greyish-brown plumage striped all over with white; the wings and the tail are maroon. It inhabits the Himalayas.

The *Argya* differ from the previous genera by their partly feathered nostrils and by their longer and very tapered tail. They are found in the plains of India, of Asia Minor, and of Africa. They have the same habits as the other Jay-Thrushes. Their colours are generally very dull; grey and brown of various shades striped with black dominate therein. They are in short very moderately attractive aviary birds, and we shall content ourselves with enumerating the few species which are sometimes imported: *A. malcolmi* and *A. caudata* from India; *A. squamiceps* from Arabia; *A. acaciæ* from Abyssinia. It is possible, indeed, that some other species very common in Africa or in India may have been introduced.

The *Crateropus* are only distinguished from the *Argya* by their larger size, their shorter tail, which is much less tapered, and their thicker beak. They are found both in Africa and in India.

The Grey Babbler or "Seven Sisters" (*C. canorus*) is imported from time to time. It is a bird of a dull and rather pale brownish-grey, which is only remarkable for its yellowish-white eyes, and its amusing attitudes. In 1908 a couple were brought from Bombay by the late Mr. Boullet; he kept them for several years in his aviary at Corbie, where they nested two or three times each summer in the ivy, but they never brought up any young. He gave me these birds in 1912; when kept by themselves in an aviary they continued to nest, but destroyed their young at the end of a week. None were ever reared.

Two South African species have also been imported: *C. jardinei*, of a brownish-grey, striped with dark brown and white, and the *C. bicolor*, a beautiful white bird with the tail and wing feathers of a dark brown.

During the last few years one could see a very remarkable bird in the Zoological Gardens, in London. It was the *Pterorhinus davidi* of North China. Its dress is, however, very modest: earthy brown, lighter below, with bluish-grey wing feathers; its beak is fairly long and curved, of yellow colour, half covered by long pile-like feathers growing from the base. But the plumage of this bird is delightfully light and soft, and its attitude most graceful. The specimen in the Zoological Gardens in London was very tame; it lived nearly three years. It is the only one, I believe, which has been seen in Europe.

The birds of which we have just been speaking have a peculiar beak; the Scimitar Babbler (*Pomatorhinus*) has its beak longer still, thinner, and more curved; the tail is tapered, and the feathers of the crown are lengthened and can be erected when the bird is excited.

These birds nest close to the ground and lay white eggs without any spots. Their nest is pretty. They form a numerous and well-defined genus; they are found in India, China, in the Sunda Islands, in Indo-China, and as far as New Guinea and Australia.

Up to the present only Indian species have been imported.

It is the Rust-cheeked Scimitar Babbler (*P. erythrogastrus*) which is most frequently seen in Europe. It is olive brown on the back; russet moustache near the beak, then black; forehead, parotic regions, sides of the neck, legs and lower covering of the tail brown; sides of the breast and of the body chestnut, with stripes of olive green; chin, throat, centre of breast, and abdomen white.

It is an excellent aviary bird, with a strange appearance ; there is nothing more curious than to see it striking the ground to the right and to the left with its great beak in order to seek its food there.

P. maccllellandi only differs from the preceding by its breast spotted with black.

P. schisticeps has the top of the head of a slaty-grey ; the upper part of the body is olive russet brown ; white eyebrows, lores and parotic regions black ; under part of the body white with a great brown spot on the sides of the neck, of the breast, and of the abdomen.

P. olivaceus scarcely differs from the preceding except by the absence of the brown on the sides of the breast and of the abdomen. I found it in Annam in the tall grass.

II. THE LESSER BABBLERS (*Timeliinæ*)

The *Timeliinæ* are Jay-Thrushes in miniature ; a strong beak, short wings, and large feet are typical of the group. They live, however, a rather solitary life close to the ground, and are not very noisy ; their eggs are spotted, except in the case of the *Stachyris*, and they have no crest ; males and females are alike. They are found in Asia, Africa, and Oceania.

So far as I know, only six species have been imported and only the Golden-eyed Babbler has been imported in any abundance.

In captivity these birds, when once acclimatized, are not delicate ; the food of the small insectivoræ such as the Warblers, suits them very well ; they like a little chopped raw meat.

They generally become very tame, they are always very intelligent and adopt charming attitudes ; they are, therefore, very desirable both as cage and as aviary birds. They have not hitherto bred in captivity, so far as I am aware.

The Red-capped Babbler (*Timelia pileata*) is a charming little bird, whose black, deep, and narrow beak gives it a peculiar expression. It has a white forehead and eyebrows, black lores, a dark russet crown ; the lower part of the body is white shaded with grey, the beak olive green ; the tail is striped with brown in two shades. It inhabits India, Indo-China, and Java.

I had one of these Babblers in a cage ; it was delightfully intelligent and lively, but rather delicate,

The Golden-eyed Babbler (*Pyctorhis sincensis*) is of a russet brown above, with the lores and the eyebrows white, as well as the chin, the cheeks, the throat, and the breast; the abdomen and the sides are a pale fawn. The particular feature of this bird is that it has eyelids of a bright orange yellow and a pale yellow iris; the beak is black. It inhabits India and Indo-China.

These Babblers are excellent cage birds which one can put into an aviary for the summer. Like the preceding species, they have charming manners.

Four other Babblers have also been imported on rare occasions, viz.: *Stachyris leucotis* of Malay and of Borneo, *S. nigriceps* from the Himalayas; *Stachyridopsis ruficeps* from the Himalayas and China, and *S. pyrrhops* from the Himalayas.

(To be continued.)

HOW TO KEEP INSECTIVOROUS BIRDS IN PERFECT CONDITION

By P. F. M. GALLOWAY

(Continued from p. 77)

THE GRASSHOPPER WARELER (*Locustella naevia*)

This bird I have found in my locality every spring. I know of several favourite marshy places along the River Kennet in Berkshire, where I can be fairly certain of seeing and hearing it at the right time of the year, and also on three commons on the hills not far from the town of Reading, for this bird chooses dry open commons where the furze grows luxuriantly and where the grass, heather, and oak scrub grows rank, just as often as the low-lying marshes.

It is not by any means a common species, at any rate I cannot call to mind any one season that I have heard or seen more than half a dozen, and if they were about I think I should know of them, for I am out and about their favourite haunts a great deal.

Some years I have found only two pairs, others anything from two to five pairs; like other species they appear in some seasons to vary a good deal in numbers. I do not, of course, know if this applies to other parts, but I am speaking of my own neighbourhood.

They arrive in their favourite haunt about 10th April, but in some seasons I have not met with it until the 23rd of the month.

When they first arrive they sing their reeling notes at intervals during the day, but after a short time hardly a sound is heard from them until sunset, and they can be also heard at sunrise.

This species is rather skulking in its habits, slinking along the ground slowly, threading its way through the grasses and undergrowth. I have always been greatly interested in this little Warbler; although very sombre in colour it is very neat and graceful in appearance.

In colour it is olive greenish brown on the upper parts, each feather being darker in the centre, giving it a slightly speckled appearance, the dark centres of the feather graduating up to the forehead where they are very tiny, but quite distinct. The breast is pale creamy buff, the throat being a little lighter; on the latter is a little necklace of tiny brown spots. The hen is like the cock but minus the spots: the under tail-coverts unusually long, ashy buff with dark splashes of brown in the centre, and reaching to within half an inch of the end of the tail, about the longest under tail-coverts of any British Warbler; the tail has the outer feathers very short and gradually increasing to the centre feathers, which are the longest, and when this bird spreads it like a fan, which it often does, the tail looks very wide for such a small slender bird.

This species does not hop, but walks slowly and picks its feet up like a proud little Game Bantam. This is the only bird I know that can take a step or two backwards if anything should disturb it in front; if one of these should be kept and the owner should put his hand towards the front of the cage when the bird is approaching, instead of running to the side it will take a step or two backwards just as easily and gracefully as it does in moving forwards; at times it can run along fairly fast, as I have seen them do when driving the hens to nest.

I have read some works in which it has been stated that the Grasshopper Warbler is so shy that it is difficult to get even a glimpse of the bird, and that it is so cautious that it will run out on to a twig, deliver its song, and retire into the undergrowth at once.

In all my experience I have never seen it do so. I have been on a common and with care have been able to approach within a few feet of it, so near that I could see its tongue moving whilst reeling.

The great thing is to stand motionless ; if no movement is made on the part of the observer, the Grasshopper Warbler will take no notice of you, and when I say I have had them reeling and running almost over my boots I can speak, I think, from experience. It happened in this way.

One lovely evening during the middle of May, when the sun was just sinking and the weather calm and warm, I went out on to a common where I could hear a Grasshopper Warbler reeling loudly ; after picking my feet up and placing them down very quietly, taking care to avoid treading on any sticks, I came upon the spot where he was ; it happened that this particular piece of ground contained rather low bushes, and where I stood the furze was scanty and very short.

The bird was within a few feet of me and where I stood was a rabbit run, and my feet within an inch or two of it. I stood quite still, round came the hen, running fast right in the rabbit run, the cock bird was a foot behind her running with his tail spread out like a fan and his wings raised up over his back, displaying to the hen and reeling as hard as he could reel ; round they went in a circle and past my feet again within an inch of my boot ; this they did several times before going off in another direction, and I believe if I had put my foot into the middle of the rabbit run they would have run over my boot.

The reeling song of the Grasshopper Warbler, resembling the noise made by a grasshopper (insect), does not exactly convey the song. The song more nearly resembles the noise made by a new free-wheel on a bicycle, but this is too high pitched ; the nearest noise you can make to the song of this bird is to get a check reel from a fishing tackle shop, and choose one of good size that produces the sound as near as possible in the right key.

If you know a locality where for certain there is a Grasshopper Warbler, just turn this check reel fairly fast and quite evenly and the bird will soon disclose his whereabouts.

I have had this bird come round me, and whilst I have been reeling he has been reeling, both reeling together, the bird being very agitated and popping in and out of the undergrowth close to me, no doubt worrying himself at not being able to find out where the other Grasshopper Warbler was.

The nest of this species I have found on two occasions only, and I can safely say it is an extremely difficult nest to discover.

Both of those I found were on a common, and although it was an extensive one, and the bird should have chosen a quiet place, yet the nests in both instances were placed close to a footpath and hard road on the edge of the common.

The nest is placed right on the ground, and these particular nests were not placed under large bushes nor in tall tufts of grass, as in some cases, but were placed in quite short furze with just a little grass growing through it, but were carefully concealed.

These nests I found at the end of May, and both contained young a few days old.

I sat down within 4 feet of one nest to watch the parents feed their young. The cock bird would show himself now and again with a large moth or sometimes a caterpillar in his mouth, but the hen I never saw, so careful was she that, although I could almost see the nest and had my eyes fixed on the spot, she got on her nest each time without my seeing a sign of her.

The eggs are of a pinkish ground colour with numerous spots of rusty red, in some the eggs are much more spotted than others, appearing as if sprinkled with cayenne pepper.

The Grasshopper Warbler will, like other insectivorous birds, rear their own young in captivity quite easily if given plenty of live ants' eggs, small mealworms, and a few green caterpillars; the latter can be found in plenty rolled up in nettle leaves; it is the caterpillar of the pearl moth.

This bird will reel in captivity at intervals all day, but is silent after July until the following spring.

The cage most suitable should be long—about 30 inches long, 13 inches high, and 9 inches deep; it should have a few small tufts of grass and heather placed on the floor of the cage and a perch each end, and one long perch level with the front rail. This bird will enjoy walking about and threading its way through grass and heather.

They do not fly far at a time, and it is wonderful how this bird ever covers the distance in migrating.

If you see the Grasshopper Warbler on perhaps a small oak sapling,

or bush, as I have seen him, on being disturbed he either runs down a bough to the ground like a mouse, or else drops or flutters down into a small piece of furze, and if the observer kicks the bush, instead of the bird flying a distance away, he just lazily comes out and falls into the next bush often only a couple of yards away.

This species appears to feel the cold in winter more than most of the other Warblers, and requires heat: a temperature up to 65 degrees is quite suitable.

The feeding of this species in captivity should be the same as recommended for the Nightingale, but I always, in the way of titbits, gave it occasionally a few house flies, or when I found a few small spiders I gave them; sometimes in my rambles I came across some small green smooth caterpillars on the low oak boughs, I thought of the Grasshopper Warbler and put them into an empty matchbox for him, and he always appreciated them, for this bird is purely insectivorous, and does not eat fruit or berries.

(To be continued.)

MEALWORM BREEDING

By KARL NEUNZIG. Translated by DR. E. HOPKINSON

The following is a translation of part of the chapter on Insect-food for Birds (p. 517) in Neunzig's *Einheimische Stubenvögel*. For its use here I tender my grateful acknowledgments to the author and publishers. At the present moment, when mealworms are so scarce, these very practical directions as to their breeding are of special interest.

These two volumes¹ by Herr Neunzig form a fifth edition of Russ's great work on *Cage-birds*, and are far and away the best book on the subject I know. They give full and easily followed descriptions of practically all birds which have been kept in captivity as "Stuben-

¹ Vol. i: Dr. Karl Russ' *Einheimische Stubenvögel*/von/Karl Neunzig./Funfte neuarbeitete und wesentlich vermehrte Auflage./Mit über 200 Bildern im Text und 20 Tafeln in Farbendruck./ Magdeburg,/Cruetz'sche Verlagsbuchhandlung,/ 1913. Vol. ii: *Die Fremdlandische Stubenvögel*/von/Karl Neunzig/((Zugleich 5. Aufl. des Karl Russ' schen Handbuchs für Vogel-liebhaber, Bd. i)/Mit 400 Bildern im Text und 42 Tafeln in Farbendruck. Magdeburg,/Creutz'sche Verlagsbuchhandlung, 1921.

vögel ", that is, those suitable for cages, bird-rooms, or aviaries, with short notes on their wild life and full directions as to their treatment in captivity, their breeding, etc., while the whole is well illustrated, the two volumes containing sixty odd coloured plates, and some 600 black and white illustrations. It is certainly a book no bird-keeper who can read German should be without. I do not know the published price, but my two volumes cost £1 and 30s. respectively second-hand ; they are more than worth that to me.

Of all the insects which are used for living bird-food, and which can be bred without much difficulty, the mealworm is the most important.

This is the larval stage of the meal-beetle, and has been bred from early times. In the *Gefiederte Welt.*, 1903, p. 125, D. Waschinsky, of Berlin, the owner of a large mealworm breeding establishment, gave an account of his methods and directions how to achieve success and avoid the many mishaps and failures which attended his early efforts.

He writes : " Mealworms are commonly kept in pots, glass jars, or tins, but these are not fit places for breeding, and seldom produce successful results. If such a pot or tin, which is fairly full, is examined, it will be found that the interior is markedly warmer than the air of the room in which it stands ; this heat is caused by the continual movement of the worms, and by their rubbing one against another, and the result is that the interior of the pot becomes wet and sweating, and the bran, in which the insects live, damp and soggy. All this favours the development of the worms' greatest enemy, and their breeder's bugbear, mite ; when these appear, the whole brood is lost, the bran becomes a black, sticky mass with a mouldy putrid smell, and the owner can do nothing but throw the whole thing away. All this can be avoided by the use of wooden boxes with lids, to which perforated zinc is fixed to provide ventilation, and which fit inside the rim of the box resting on a narrow batten all round. The size of the box does not matter very much, except that its depth should not be more than 10 to 12 inches, for deeper ones are no good. Boxes fitted with narrow strips of metal all round inside, to prevent the insects crawling up and escaping are in actual practice useless, for in time, owing to the drying and warping of the wood, channels form which allow their passage. In proper boxes,

feeding the worms is quite easy, and when they have been in use for some time the whole thing can be limewashed and scrubbed with sand, and so thoroughly cleaned and the wood preserved. Do not attempt limewashing when the box is well-peopled, for then the moisture caused will only help towards the development of mite.

A small table should be fixed in the middle of the breeding-box, and its top surrounded by a narrow rim to form a tray, on which the moistened food for the worms can be placed. This device prevents the development of damp in the litter itself, and it, as a matter of fact, is the main instrument to success. The box is to be filled with white bran reaching up to the level of the food-tray, and to avoid the introduction of meal-mites with the bran, O. M. Kisch recommends that it should be baked in an oven at a good heat before use.

The box is now ready for the reception of the beetles, worms, pupæ, or eggs. Beetles are difficult to obtain, so one usually starts with the worms, the whole development of which (worm, pupa, beetle, eggs, worm again) is most interesting to watch. As to the number of worms to be used to start operations, opinions vary, but too few are better than too many, for frequently when too many are introduced the resulting harvest does not equal what was put in. A friend of mine took 8 pounds of mealworms, which in spite of my warnings, he put into two boxes; his final result only totalled 2 pounds, while I have obtained as many as 80 pounds from 8. My advice is to start with 1,000 worms, 900 pupæ or 800 beetles, for a box with a floor area of 12 by 12 inches.¹ It may be asked why more worms than beetles. The answer is that 1,000 worms produce 800 beetles, the other 200 disappearing for one reason or another. As soon as the worms, pupæ, or beetles have been introduced, the box is in breeding order, and for food, pieces of crumbled white or black bread must be placed on the tray, and a good supply of discs of carrot added in such quantity and renewed often enough to ensure the worms never being without food for more than two days. When carrots are scarce, lettuce stalks can be used, or if neither are obtainable and the bread stale, it must be

¹ The illustration in the original shows a larger floor-area than this, about 18 by 18 inches, that is, in relation to the height (10–12 in.) as given above. This seems a more natural and more suitable size.—E. H.

soaked and more or less dried before crumbling on to the tray. This food suits both beetles and worms—the tray will be always found swarming with them—but without moist food both beetles and worms die quickly. What remains of the food should be removed every two days, and with it all refuse, which has collected, not only on the tray, but any which has fallen into the bran. This is also eaten by the insects, as one sees from the powdery state to which it is reduced, and fresh bran must be added from time to time, but never much at a time. For satisfactory breeding, at least two boxes are required, and as soon as beetles appear they must be left undisturbed in the bran; directly dead ones are found, a second box should be started for further breeding, and the first now used as a food supply for the birds. Finally, I should say that the best temperature for mealworm-breeding is that of an ordinary room and that too much warmth is just as bad as too great cold. Breeding may be started at any time of the year.

The development of a meal-beetle takes about a year, and from five to seven months after the laying of the eggs a good supply of food-worms ought to be available. These should be collected from the food tray, and not hunted for among the bran.

Mites which have gained access to a breeding-box, may, if discovered early enough, be expelled by heat applied in such a way that it is first felt at the bottom of the box; as the heat gradually rises through the litter, they come to the top to escape it; then if a piece of linen is spread on the top of the bran, they will all collect on this and eventually can all be removed en masse on it. Mites can crawl up even glass or polished metal. One can also recommend warming of the box at night, and removal of the cloth every morning, leaving the box afterwards to stand all day in the air or, better still, in the sunlight, as the latter in a very few days will get rid of all the mites and destroy their eggs. The worms, pupæ, and beetles suffer no harm from such heating, though naturally, care must be taken that the heat is not too great or applied for too long. (See *Gef. Welt.*, 1903, 311.)

As regards the use of mealworms for feeding birds, the following recommendations should be followed. Except under exceptional circumstances they should not be given in large quantities or as a regular food. Their special value is for the "meating-off" of fresh-caught

birds, and these will often need an abundant supply ; birds which have been longer in captivity should only have them as treats and during the moult, or as a stimulus to song in its season. The giving of too many mealworms, except to birds in song, may be the cause of all sorts of diseases, such as ulcers of the feet (in Redstarts), brain-trouble shown by fits or staggers (Warblers), cramps, and other affectations. Mealworms are also of great value in the rearing (by hand or by their parents) of young birds ; for this the softest whitest worms should be selected, and, if necessary, be freshly skinned. Although birds as a rule can quite easily deal with the live insect, many keepers pinch the worm's head before giving it, and this should always be done when they are to be added to a food-mixture. Small birds should only have small or medium-sized worms, as they might have difficulty in swallowing larger ones.

SOME NOTES ON A YELLOW-BACKED LORY (*LORIUS FLAVOFALLIATUS*)

By Miss D. G. CROSSE, F.Z.S.

The Lory illustrated came from one of the islands between Celebes and New Guinea, either Batchian, Morotai, Obi, or Raou, in 1918 ; being apparently quite a young bird, sex unknown, but believed to be a female, anyhow she was named "Poppy". A description is unnecessary, as Mr. Dempster has done her ample justice ; her measurements, however, are as follows, total length about 11 inches, wings 6 inches, tail $3\frac{1}{2}$ inches, tarsus $\frac{3}{4}$ (0.75), culmen 1 inch. She is at liberty to do just as she pleases. During the summer she spends the whole of her time out of doors, climbing trees and pulling flowers to pieces ; carnations and pinks are her favourites, she thrusts her brush-like tongue into the centre of these, and then tears them open. She is very clumsy on the ground, taking long jumps, and as often as not falling over, a poor flyer, rarely rising more than a few feet above the ground, but she is very fond of climbing a small tree about 10 feet high, and gliding off, shrieking meanwhile ; she always seems to land rather heavily, but does not appear to mind, as she will repeat the performance several times. I am not afraid of cats getting her, as I have two



Yellow-backed Lory.

Scotties, with both of whom she is on quite good terms, unless they try and steal her milk, and then there are many angry words on her part. She is a great bather, and seldom misses a day unless very cold. An excellent whistler, quite a conversationalist, but at times difficult to follow, a fair mimic, exceedingly inquisitive, and passionately fond of music. She dislikes strangers, and is very hostile to other birds, especially to a little all-green Parakeet, which is also at liberty. Her food consists of Nestlé's Milk made rather weak, one teaspoonful to four tablespoons of boiling water, served slightly warm; she likes the milk just as it is, and generally refuses it if any biscuit, Mellin's Food, or honey is added, very occasionally I am able to add a little cornflour. All fruit juices are welcomed, as are most soft fruits, especially grapes and oranges, she will sometimes take apple, but not banana, care must be taken not to give orange and milk together. I have seen her catch Crane flies, but she makes no attempt to eat them. Honey does not agree with her unless it is well diluted; once during an absence she was given some straight from the comb, and she was very queer internally for several days. This is the only occasion she has been ill, and although her diet is so limited, she is always in perfect condition. She is quite tame for a Lory, and loves to sit on the back of my chair and run her beak through my hair; she will sit on my hand, but dislikes being stroked, a liberty which is on no account tolerated from a stranger. She is very playful, and her favourite toy is an old gold bracelet, which she tosses into the air, after which she dances round it, tapping her beak on the ground. She has a passion for a small wooden box cage with the wire front removed, and becomes most excited if she cannot find it. If she is up a tree, and I whistle, and hold her cage up for her to see, she immediately comes down and gets in, always through a circular hole in the side, and never through the front. The floor of this cage is covered with about $1\frac{1}{2}$ inches of sawdust, to which a little Sanitas powder is added, this is of course changed daily. She seldom sleeps on a perch, but makes a "scrape" in a corner. Moderate cold and rain she does not mind, but wind she hates. Of course, she is not allowed out in the winter, but is kept in a conservatory. Taken all round, she is a most interesting bird, and makes an ideal pet as long as she is kept out of the house.

NOTES ON A TAME CORMORANT (*PHALACROCORAX CARBO*)

By ANNIE C. THOMPSON

Unlike the Green Cormorant which rarely leaves the rocky coast-line, the Black Cormorant is a wandering bird. It has been recorded from almost every county of the British Isles, and is a well-known visitor to the fens of Cambridgeshire from time to time.

My specimen was caught on cultivated land near Soham. It was mistaken for an otter, chased into a drain-pipe, secured by the neck with a pitchfork, and transferred to a sack. In this it was brought to an ornithological friend of mind who, having no suitable place in which to keep it, passed it on to me.

Happening to have a sufficiently large covered aviary vacant, I hastily improvised three bass rocks of brickwork, filled up the cement tank (which was far too small) with water, and introduced the bird to its new quarters. By this time it was quite dark, so I scattered several pieces of fish about the floor, and left the Cormorant to settle down.

In the morning I found it was very wild, and continually flew on to the wires of its cage, to which it clung with its webbed feet in the cleverest manner. It had not touched any of the carefully counted pieces of fish.

As he continued to refuse food, I decided on the following morning to try forcible feeding. I put on a pair of stout leather gloves, protected my eyes with goggles, and entered the cage.

I caught my bird without much difficulty, but his neck came round like a flash of lightning. The hooked point of his beak caught my arm between the top of the gauntlet and my rolled-up sleeve, a contact which resulted in an incision 3 inches long. Fortunately I was able to slide my hand higher up the neck without letting go my hold, and my husband put small pieces of fish into his beak.

He swallowed a considerable number of these, and then declined to take any more, so we let him go, and left some food on the ground, which again he refused to touch.

The sixth day he fed from my hand readily, and showed con-

siderable skill in catching pieces thrown to him as he sat on his pile of bricks.

On the eighth morning I found him waiting for me at the cage door, and on the eleventh I began to feed him from the inside of the aviary. He did not allow me to stroke him until the twenty-second day, but after that he made rapid progress, and on the twenty-fifth he jumped into my lap as I was stooping to feed him.

Next day I got a friend to clip one of his wings, and put him out on the lawn, with the result that he went straight back to his cage. However, he soon became perfectly used to freedom, and got to like it so much that he had to be enticed home with a display of fish.

He preferred company, and would sit down on an arrangement of bricks at my feet in perfect contentment so long as I was reading or sewing, but if I got up and wandered down the garden, he would spread both his wings and come sailing after me in a series of long hops, so as not to let me out of his sight. Whenever left alone, he sought a perch at some height from the ground, the back of a garden seat, or preferably the sundial.

He did not readily take to water, and absolutely declined to pick up pieces of fish put in it; while he tolerated rather than enjoyed a gentle spray from the hose-pipe.

He greatly enjoyed a game of pretending to catch him by the feet, and would dance up and down just out of reach, waving his wings, and uttering sharp cries between a caw and a bark for as long as I cared to continue the game.

He was intolerant of great heat, which made him gasp and droop his wings. He disliked wind, and in wintry weather always sought the most sheltered of his indoor bass rocks.

I fed him entirely on fish, and although he showed a decided preference for small herrings, which he swallowed whole, he would eat practically any sort. Large bones he rejected, small ones he swallowed and returned again in the form of a pellet. On several occasions he came across frogs while loose, but although he invariably killed he never ate them.

My experience is that weeks, sometimes months, are required to make a really wild bird tame, and the extraordinarily short time

which elapsed before this one became not only tame but an affectionate pet surprised me extremely.

We called him Cavendish because of his strong resemblance to a shag, but we were never sure of his sex, especially when he developed the habit of making nests with stray pieces of stick and other oddments, such as gardening gloves.

When he first came to me he had the blue iris of a young bird. While with me this changed to green, the mantle became much brighter, and signs of white patches appeared on the thighs, but he never reached full maturity. He began to mope and then to decline food during a prolonged absence I took from home, and although everything possible was done for him he died before I got back, and I could only give him an honoured resting-place beside the Linnet and the Jay.

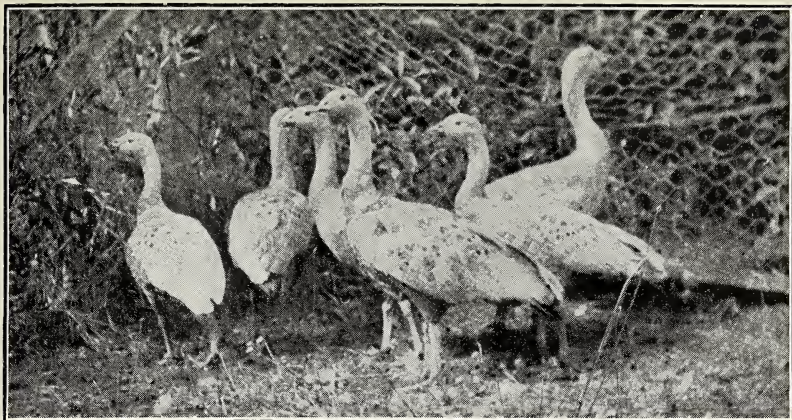
I have never had a more interesting pet, nor one with more character and individuality, and none, I think, whose loss I so much regretted.

FOREIGN BIRDS AT THE CRYSTAL PALACE

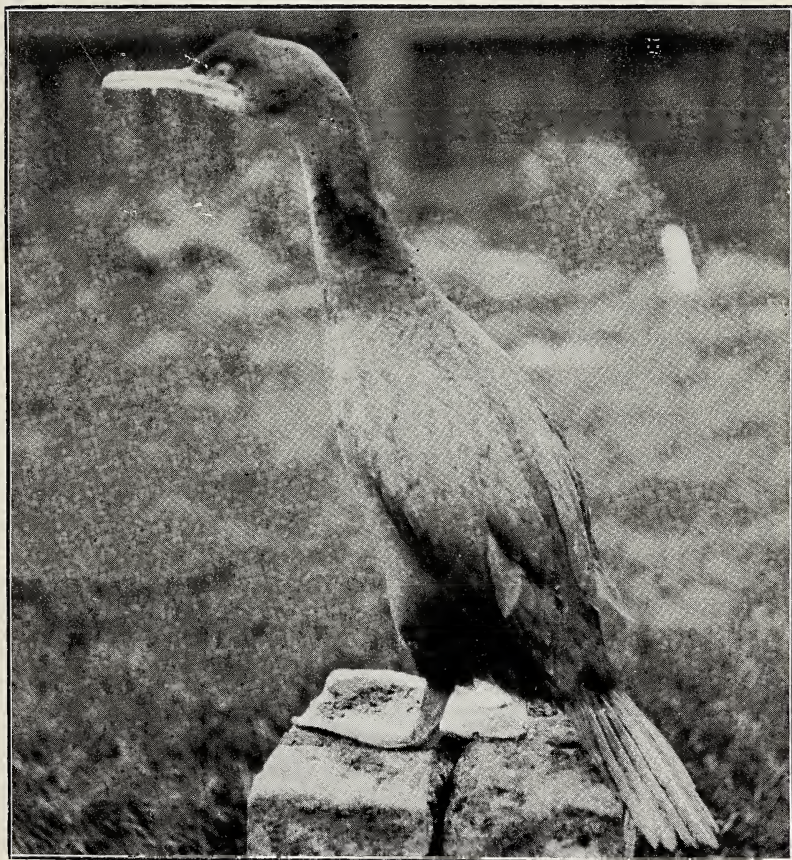
The Cage Bird Show at the Palace on the 6th, 7th, and 9th February was a great success, and the foreign bird classes were, on the whole, well supported. One missed the fine collection, which last year helped so much, from the late Mrs. Dalton-Burgess, whose recent death has been a blow to the foreign bird interest, but it was very satisfactory to find such a strong team shown by Mr. Hubert Whitley, whose enterprise in transporting so large a number of rarities from Paignton is to be highly commended.

Budgerigars appeared to be becoming exceedingly popular, and one hears of a club being formed especially to look after their interests. At the show, besides a number of the familiar yellows and greens, one saw the exquisite sky-blue and the less common cobalt-blue varieties. We heard of mauve, white, olive, and other varieties, but surely the sky-blue will never be beaten for beauty?

The class for Lories and Lorikeets contained a very fine Musky Lorikeet (1st prize) and a nice pair of Yellow-backed Lories (2nd), both owned by Mr. Frostick, while Mr. Whitley obtained third with a good Black-capped Lory.



**Young *Cereopsis* Geese in the collection of Mr. Heumann,
of Sydney, N.S.W.**



A Tame Cormorant

In the class for Lovebirds, Brotogerys, etc., Mr. Frostick came first with a very good pair of Orange-flanked Parrakeets, a second pair of the same species obtaining third prize for Captain Rattigan. Second was awarded to Mr. Whitley for a good pair of Rosy-faced Lovebirds. There were two pairs of Abyssinian Lovebirds in this class; this species, once so rare, having become a comparatively common cage-bird now. It is quite possible, however, that in a few years it may be as rare as ever again unless amateurs will breed it. Its present abundance may be due to a chance importation which may not occur again.

Rosellas, Redrumps, Ringnecks, etc.—In this class Mr. Whitley scored the first three honours with a pair of Banded, an Alexandrine, and Blossom-head, all first-class birds. Mr. Maxwell's Redrumps came fourth. There were only three entries in the class for Conures, and here Mr. Whitley took first prize with a bird that no one present could name. It is a very rare Conure, which should one of these days make a journey to South Kensington for identification. Its condition was perfect. The same exhibitor obtained second prize with an excellent pair of Golden-fronted Conures, while third went to Mr. Frostick for a pair of Green Conures, either *C. leucophthalmus* or *C. holochlorus*.

The class for Broad Tails contained seven entries, the first prize going to Mr. Frostick for a very good Bauer's Parrakeet. Lord Tavistock's Barnard, a splendid bird, came second, besides which there were two hen Pennants, a pair each of Kings and Mealy Rosellas.

Amongst the rarer Parrakeets were some real gems, the first prize going to a splendid Queen Alexandra owned by Lord Tavistock, while another, almost as good, sent by Mr. Whitley, obtained second prize. A Rock Peplar belonging to Mr. Maxwell came third, while a Yellow-bellied Parrakeet, a very rare species nowadays, belonging to Lord Tavistock, was given fourth prize. Mr. Whitley also sent a good Blue-bonnet which was awarded V.H.C.

In the class for Hybrids and other curiosities, Mr. Whitley scored first with a Hybrid Red-rump and Blue-bonnet—a very beautiful and interesting bird. Second and third prizes were awarded to Mr. Sumner Marriner for pairs of Black-cheeked and Peach-faced Lovebird Hybrids, resembling small Peach-faces with dirty faces. Fourth prize went to Mr. Whitley for a Cinnamon-coloured Java Sparrow.

There was nothing very striking amongst the larger Short-tailed Parrots, but in the class for Macaws and Cockatoos some treasures. Mr. Whitley's very fine Hyacinthine and Mr. Maxwell's Lear's Macaw, obtaining first and second respectively, were a fine couple. The third prize went to a splendid White-crested Cockatoo owned by Mr. Frostick, while Mr. Whitley's exceptionally large Sulphur-crest was of especial interest, as it was hatched and reared at liberty amongst the trees of Paignton. Unfortunately, one of the parents was subsequently shot by a neighbour, who should have known better.

Mr. Whitley obtained first, second, and third prizes in the class for "Any other Species of Parrots", with (1) a very good pair of Red-capped Parrots, (2) a hen Red-sided Eclectus, and (3) a beautiful little Yellow-lored Amazon. Mr. Whitley was the sole exhibitor in this, as in the next class, which was for Quails and Doves: here were four exhibits which took prizes in the following order: First, a Nicobar Pigeon; second, a Red Mountain Dove; third a good cock *Peristera cinerea*; and fourth, an example of the rare West Indian Violet-backed Ground Dove (*Geotrygon chrysia*).

The classes for the Commoner Waxbills, etc., might have been better supported, since these birds are so widely kept. Amongst the Commoner Mannikins, Mr. Frostick exhibited a pair of Javan White-headed Mannikins, a species very similar to the Maja Finch of the Malay Peninsula, but distinguished by its deeper chestnut colour and black throat and fore-neck.

The next class was for the rarer Mannikins, Quail-finches, Long-tailed Finches, etc. Here Mr. Whitley took first prize with a nice pair of Chestnut-breasted Finches, and second with an equally good pair of Long-tailed Grassfinches. Third prize went to Mr. H. W. Simpson for a pair of Cherry-finches, rarely seen nowadays, and fourth to a cock Quail Finch shown by Miss R. Follett.

The class for Gouldians, Diamond, Parrot-finches, and the rarer Buntings and Waxbills contained thirteen entries. Mr. Frostick obtained first prize and various specials for a good Violet-eared Waxbill, Mr. Whitley second with a splendid pair of Rainbow Buntings which I think should have come first, third went to Mr. Frostick for a Nonpariel, and fourth to Mr. Stewart for a Red-headed Gouldian.

Mr. Whitley's very fine Versicolor Bunting certainly deserved more than V.H.C., being, besides its rarity, a very difficult bird to get into show condition ; and Mr. Maxwell was most unlucky in his Tricoloured Parrot-finch being overlooked.

In the class reserved for Cuban Finches, Seed-eaters, Grosbeaks, etc., Mr. Frostick again came first with a good Red-crested Finch, Mr. Whitley second with a Blue Grosbeak, while Mr. E. Allison obtained third and fourth prizes with an Olive and a Cuba Finch, both cocks, in excellent condition.

Mr. Whitley came first in the Cardinal class with a beautiful Black-cheeked Cardinal, a species said to be very common in Guiana and Venezuela, but very rarely imported. Mr. P. W. D. Barrett obtained second prize with a Red-crested and Mrs. Bickerstaff third with a good Virginian.

The Weaver class was a failure, having only two entries, Mr. Whitley's Dinemeli Weaver (first) and Mr. Frostick's Red-collared Whydah (second).

The Tanager class contained only six entries, Mr. Maxwell's very fine Superb taking first and special, and his Silver-blue second, while Mr. Whitley's very fine Archbishop, or more correctly "Ornate", came third, the same owner being awarded V.H.C. and H.C. for a good Superb and a rare Crested Black Tanager, probably *Tachyphonus surinamus*. This last deserved a higher award.

Sunbirds, Sugar-birds, and other Tanagers, were poorly represented by only four entries. Mr. A. Martin took first with a good Purple Sunbird, the only one in the show ; Mr. Whitley second with a good Yellow-winged Sugar-bird, another of the same species being shown by Mr. H. W. Simpson, while Captain Rattigan obtained third prize with a good Chestnut-headed Tanager (*Calliste desmaresti*), the last being a very rare species.

Only three entries were obtained in the class for Pekin Robins, Shamash, Bulbuls, etc. Mr. Whitley took first and second prizes with a Red-eared Bulbul and a Shama, while Mr. J. D. Bruton obtained third prize with a pair of *Liothrix*.

The class for Hangnests, Cow-birds, etc., contained but four entries. Dr. J. du Barrie sent a fine Crested Cassique (first) and a Yellow-

rumped Hangnest (fourth), and Mr. Whitley two Cow-birds (second and third), but of their exact species I am uncertain.

Mynahs and Starlings, three entries only, and all by Mr. Whitley. The first prize went to a fine Pagoda Starling and the second to a Blyth's Starling, a rare bird.

The Glossy Starlings made up a fine class of ten entries, of which the best birds in the class were entirely overlooked by the judge. These were Mr. Whitley's very rare Chestnut-winged Starling (*Amydrus morio*), and Burchell's Glossy Starling. Then first prize went to Mr. Maxwell's pair of Superb Spreos, of which species another example obtained third prize for Mr. A. Martin. This beautiful Starling, of which there were five in the class, has been imported in large numbers, and is no longer a rarity. It is, moreover, a bird that manages to keep itself in perpetual show condition. The second prize was awarded to Dr. J. du Barrie for a very nice Purple-headed Glossy Starling; and the fourth to a Green Glossy Starling sent by Mr. F. C. Levett.

The class for Crows, Pies, Toucans, etc., contained five entries, four being from Mr. Whitley. First went to a Red-billed Toucan of Mr. Whitley's, the second to another of the same species belonging to Mr. Frostick. A White-backed Piping Crow of the small Tasmanian race came third, and a beautiful example of the Australian Crow-shrike (*Strepera*) fourth.

The two last were All Other Species classes, the one for birds not larger, and the other for birds larger, than a Blue Robin.

In the first of these Mr. Maxwell scored first with a small accentor-like bird which I could not identify, second and special to a pair of Tanagers belonging to Mr. Whitley that were also difficult to name, probably some species of *Saltator*, third to a Great Saltator, and fourth to a Golden-fronted Fruit-sucker.

The last class contained a fine pair of Laughing Kingfishers (first and special) and a Long-tailed Roller. Five out of the six entries making up these two classes were from Mr. Whitley's collection.

One would like to see the lighting arrangements improved at the Palace. In the foreign bird section many of the exhibits could not be seen at all unless the cages were taken down and held in the light, but on the whole the enterprising Dulwich and Peckham Cage Bird

Society are deserving of very hearty congratulations on the success of the undertaking. It is much to be hoped that next year many more aviculturists will participate, for on this occasion had it not been for Mr. Whitley's fine collection half the classes would have had to be cancelled.

D. SETH-SMITH.

CORRESPONDENCE

LICE IN BIRDS

SIR,—To show that one cannot be too careful in examining newly arrived birds, the following note may be of interest. Last August I received a number of different birds from a dealer. These all appeared to be all right and healthy, and after the usual quarantine, which all my birds undergo, they were placed out in various aviaries. Some three weeks later I noticed that a pair of gallinaceous birds, and a pair of small insectivorous birds, part of the above consignment, were ailing. On examination these were found to be infected with a very small lice; one bird was covered with them, giving it quite a grey appearance, but yet they were so minute that only a close examination revealed them. The other birds of this consignment were apparently all right. The badly infected bird soon died, I believe solely from the lice. The others were isolated and eventually cured. The aviary in which they had been was disinfected and whitewashed throughout. To-day, that is, seven months later, I have caught up a Military Starling and an Orange-headed Marsh Bird, old birds I have had a long while; they have been caged together in a small aviary, a long way from the previously infected one, although they both abutted on to the same wall and there was no other aviary between them. These two birds are, I find, both infected with the same lice, which must have travelled along the open wall from one aviary to another. The lice are so small, that they may easily pass undetected, unless specially looked for. It would be interesting to know if other aviculturists have had a similar experience with these filthy pests.

G. H. GURNEY.

CHEESE FOR INSECTIVOROUS BIRDS

SIR,—Mr. Thom wrote in the March Magazine that he had never seen cheese mentioned as suitable for birds.

In the February issue of this year, p. 46, the “ Little Wilts ” cheese is recommended by the late Mr. Galloway in his very excellent article on how to keep Nightingales in perfect condition, and by his advice I have made use of it for a good many years.

HUBERT ASTLEY.

COLOURED PLATES

SIR,—Last year I did my best to encourage members who can afford it to give coloured plates for the Magazine. If several are done at the same time they are cheaper than single ones. May I say that I will defray the expense of one for this year if three other members will do likewise ?

I should like to see a good representation of the different varieties of colouring in Budgerigars. Personally, I should choose as my plate a pair of Crimson-winged Parrots, accompanied by an article by yourself ; some other member would perhaps select a Dove ; another an insectivorous bird, etc.

HUBERT ASTLEY.

THE NEW BUDGERIGAR CLUB

A Club whose object is to encourage the breeding, exhibiting, and development of distinct varieties of Budgerigars has been formed under the Presidency of Mr. H. Whitley, with Mr. Allen Silver as chairman, Mr. C. T. Maxwell as treasurer, and Mr. F. C. Longlands, 66 East Street, Chichester, as secretary.

The annual subscription has been fixed at 5s., and a committee of well-known breeders have compiled comprehensive rules, standards of points, and descriptions of ideal coloration.

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Ibis, Egrets, etc., etc.

The following consignments are due to arrive during the month: s.s. *Beltana*, Galahs, Cockatoos, Lories, Rozellas. s.s. *Ormuz*, Australian Birds. s.s. *Ysldijk* from Africa, 1 Elephant, 1 Oryx, 1 Waterbuck, 1 Lemur, Reedbuck, Servals, Blue Monkeys, Grant's Zebras, Thompson's Gazelles, Grey's Zebras, Hyenas, Baboons, Sykes' Monkeys, 4 Duikers, 5 Buffaloes, 5 Leopards, 5 Jackals, 6 Lions, 6 Cheetahs, 6 Eland, 6 Birds, 6 Genets, 6 Vervets. s.s. *Falkenfels* from India, 327 Softbills, 12 Robins, 200 Java Birds, 50 small Blackbirds, 40 Homo Finches, 150 Ring-neck Parrakeets, 368 Rhesus Monkeys, 16 Black-faced Monkeys, 7 Wild Cats, 2 Tame Mongoose, 10 Pheasants, 12 Wild Ducks, 5 Blackbuck (male and female), 40 Diamond Doves, 3 Hyena Cubs, 2 Sarus Cranes, 3 Latoria Birds. 1 Panther Cub, Snakes, Rice Birds, Porcupines, Lizards. s.s. *Orama*, 11 pairs Parrot Finches. s.s. *Port Pirie*, 50 Galahs, 20 Cockatoos, 30 Rozellas, 20 Blue Mountain Lories. Brazilian shipments arriving regularly.

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THE AVICULTURAL MAGAZINE

BEING THE JOURNAL OF
THE AVICULTURAL SOCIETY
FOR THE STUDY OF
FOREIGN & BRITISH BIRDS
IN FREEDOM & CAPTIVITY

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MAY, 1925.

THE TIMELIIDÆ

By J. DELACOUR

(*Concluded from p. 94*)

III. THE WHISTLING THRUSHES (*Brachypteryginæ*)

This name has been given to a group of birds, which are distinguished by their long feet and short tails; their habits are mainly terrestrial. These birds greatly resemble the true Thrushes (*Turdidæ*) having about the same habits, and they form a link between them and the Timeliidæ. I consider even, with several ornithologists, that it is among the Thrushes that they should be placed. However, their young are not spotted, which is an important characteristic feature of the *Turdidæ*, and generally they are not migratory. Their eggs are spotted. They are found in Asia and in Oceania.

Although this group is fairly important, only three species of the genus *Myophonus* have been imported; they are big birds with a strong beak, rather shorter than the head; the eye is large, the feet long and strong, the tail short, and the plumage, generally speaking, of a dark blue coloration. The two sexes are identical.

The Himalayan Whistling Thrush (*M. temmincki*) inhabits these mountains, and those of the neighbouring regions; it is met with along the torrents and it feeds chiefly on molluscs, the shells of which are found in heaps near the places it frequents. It is dark blue, each feather being terminated with metallic blue; lores and bottom of forehead black; remainder of forehead cobalt blue; wings and tail black, the feathers being edged outside with cobalt blue; small feathers of wings black edged outside with metallic blue, some tipped with

white ; yellow beak with culm and base of the upper mandible blackish, claws black. It measures nearly 40 cm. in length.

This bird lives well in a cage or an aviary and requires to be treated like a Thrush. It has a pretty whistling call.

The Chinese Whistling Thrush (*M. caeruleus*) is distributed over the whole of China ; it is distinguished from the preceding by its smaller size (33 cm.) and its black beak. The wing is not marked with white.

It frequents the banks of watercourses, and feeds chiefly on aquatic insects. Its voice is sweet and of great compass ; it reminds one of the Blue Rock Thrush, which it also somewhat resembles in other respects.

Horsfield's Whistling Thrush (*M. horsfieldi*) inhabits the centre of Southern India, where it frequents the banks of streams in the hills. It is a little larger than the preceding species. Its beak is black.

IV. THE SIBIAS (*Sibiinæ*)

The Sibilas are of medium or small size, varying from that of a Lark to that of a Goldfinch ; they are of arboreal habits, and do not migrate ; the sexes are similar. Their plumage is generally brilliant, and they are met with in more or less numerous flocks. Their eggs are spotted.

The Sibilas inhabit India, China, Indo-China, and the East Indies.

Some species are imported and make excellent cage birds and good aviary birds in the summer. They require the diet of small insectivorous birds, with fruit.

The Black-headed Sibia (*Lioptila capistrata*) is frequently met with in captivity ; it has a slender, rather curved beak, the head is quite covered with a short black crest ; all the under part of the body, the rump and a collar of a bright pinkish red ; greyish brown back, very long reddish tail, with a black band terminating with blue grey ; wings variegated grey and red, with a white band. It measures about 23 cm.

This beautiful bird inhabits the Himalayas. I have seen it at Darjeeling. It is easily tamed, and is charming in captivity ; some specimens become remarkably tame.

The Blue-winged Siva (*Siva cyanuroptera*) is a pretty little bird of 15 cm., 6 cm. of which are tail. It is reddish olive above, very pale fawn below, with the top of the head, the nape, the back of the neck, the wings, and the tail sky-blue, more or less striped or marked with black and white; beak light yellow, claws flesh-coloured.

This delightful little bird comes over at rare intervals; it is tame and hardy, when once acclimatized, and requires the ordinary food of insectivorous birds. It inhabits the Himalayas, and is seen flitting about the trees in small flocks seeking for insects under the leaves. Allied species inhabit the Malay Peninsula, Indo-China, etc.

The Yuhinas have a medium-sized beak, curved and pointed, a fairly short square tail, and a well-developed crest. They live in small flocks on trees, and feed on small berries and insects. They are found in India and China in the mountains.

Several *Yuhina gularis* have recently been imported from Nepal, from Sikhim and from Bhutan. These are small birds, olive brown tinged with red, and are not very striking to look at.

The *Yuhina nigrimentum* has also been imported from the Eastern Himalayas; its forehead feathers and those of the crest are black, edged with grey; the nape and the sides of the head grey; the lores and the chin black; the throat white; the upper part of the body olive brown, and the under part tawny red.

The genus *Ixulus* only differs from *Yuhina* in the shorter, thicker beak. They have a heavy crest. They inhabit the Himalayas, Malay Peninsula, and China. To my knowledge, only one species has been imported from the Himalayas, *Ixulus flavicollis*, which has a brown head and crest with the parotic regions grey, the lores and a long moustache black, the nape and the back of the neck bright red, the upper part of the body olive brown, the under part white with a tawny tinge.

V. THE LIOTRIX (*Liotrichinæ*)

The Hill-Tit or Pekin Robin is the most popular bird of the whole family. Every one knows and appreciates it; as a matter of fact it combines all good qualities; it has charming plumage, a peculiar and graceful carriage, and a pretty voice. Moreover, it is regularly imported.

It is the group type which is of interest to us here ; all the birds composing it are of aboreal habits ; there is a slight difference between the sexes ; generally speaking, they lay spotted eggs. Otherwise they present all the characteristics of the Timeliidæ, especially short wings and strong claws.

The Hill-Tit or Pekin Robin (*Liothrix lutea*) is too well known to require a detailed description ; the beak is red ; upper part of the body olive green, the forehead tinged with yellow ; tail notched, black, with long olive green coverts, terminated with white ; a yellow line passes over the eye ; a dark green moustache separates the olive green of the cheeks from the bright yellow of the throat, which spreads over the whole of the lower part of the body and is tinged with orange red on the breast ; the wings are brilliantly marked with yellow, orange, and red on a background of dark olive green. The hen shows the same colours, but considerably duller, and has no red on the wings ; the forehead has no yellow.

The typical species inhabit China and is replaced by a very similar species (*L. calipygus*) in the Himalayas.

In the wild state, the Pekin Robin lives in little flocks in thick jungles ; it feeds on insects, berries, fruits, and grain. It builds in some thick bush a cup-shaped nest composed of dead leaves, roots of grasses and moss, and usually lays three pale green eggs marked with brownish red.

In captivity, the Pekin Robin is very easy to keep, it eats anything, including seeds ; canary seed, whole and crushed hempseed. But that does not suffice for it ; it ought to be given insectivorous bird food and fruits. A cock bird alone makes a charming cage bird ; couples, in an aviary, are one of the most beautiful ornaments in it ; they are inoffensive towards their companions, and have only two faults : they are too fond of hiding in the bushes and are inclined to devour eggs ; precautions must be taken in this respect. They can stand our climate perfectly well all the year round in the open air, and are easily bred in captivity as long as they have space and bushes at their disposal and are supplied with insects for rearing their young.

I have described under the name of *Liothrix astleyi*, dedicated to my friend, Mr. H. D. Astley, who has studied birds so well and keeps

such a fine collection of them, a *Liothrix* brought from an unknown locality in China. One pair of these birds reached me in 1921. The cock is similar to *L. lutea*, but has the forehead, the belly, and the eye-brows brilliant yellow, and the breast is carmine. It is a much more beautiful bird than the ordinary species.

The Silver-eared Mesia (*Mesia argentaureis*) greatly resembles the *Liothrix*. It is rather stouter, has a longer tail, a shorter body, a larger beak, the head feathers can be raised into a sort of very short crest. It is found in the Himalayas, the Malay Peninsula, and Indo-China; it is replaced in Sumatra by a more beautiful species, *M. laurina*.

The cock bird has a yellow forehead; the top of the head is black as well as the nape, the lores, the cheeks, and a moustache surrounding the parotic regions, which are light silver grey; the back and the coverts of the wings are greenish grey, the belly olive green; the remiges are marked with black, orange yellow, and red; the tail is black, with the coverts orange red, which is also the tint of a ring round the neck and the whole of the breast; the throat is yellow. The hen is duller; the coverts of her tail are tawny orange.

The Mesias live in the mountains, and their habits are very similar to those of the *Liothrix*. Their song is similar but louder. They are much scarcer in captivity, but nevertheless arrive from time to time. They must be treated like the *Liothrix*. They have bred in aviaries, especially with Mr. Pauwels.

The Minla (*Minla jerdoni*) has rarely been imported. It is a charming little bird from Szechuen (China), a similar species existing in the Himalayas (*M. igneincta*); it is olive grey above, with a black head, and a long white eyebrow which is prolonged as far as the back; the throat and the lower parts are yellowish white variegated with olive brown on the sides; tail feathers black, edged with red; coverts of the wings and secondary remiges black, tipped with white; primaries black, edged with red at the base, and with yellow at the end.

A group of curious little birds from India and China, the *Paradoxornis*, are connected with the Timeliidæ; they also have affinities with the Tomtits, which they resemble in their habits. Their characteristic is a short and very deep beak, which gives them a peculiar appearance.

One species of this group at least has been imported, viz. *Scæorhynchus ruficeps* from the Himalayas, which, unlike the other *Paradoxornis*, has a short tail; it is an olive brown bird, tinged with white below, with the head and the top of the back maroon colour.

THE TITMICE

By MARCEL LEGENDRE

The Titmice (*Paridæ*) are pretty birds which are distinguished by their thickset forms, a short beak, strong legs armed with curved claws, short and wide wings, a medium tail slightly scalloped, an abundant soft plumage in which blue, yellow, black, and white predominate. Very frequently the two sexes are approximately of the same appearance. The various genera and species of this family are distributed all over the world, with the exception of tropical America and Polynesia. Their diet is composed of insects, but also of berries, fruits, and seeds. They are met with in the forests and the woods as well as in parks and gardens, where they attract attention by their vivacity and their activity. They breed very freely and generally build their nest in hollow trees.

The song of all the Titmice is insignificant, but the beauty of their plumage, their lively movements, their gaiety and their acrobatic turns, are a pleasure to watch, and an aviary arranged to hold some species of these birds will always charm the bird fancier.

The Titmice are endowed with an excessively wrangling disposition, and often give way to fits of anger; the feathers of the head become erect, their claws contract with extraordinary force, their cries become more piercing, and with redoubled blows of the beak they attack the cause of their bad humour. Two species, the Coal Titmouse and the Blue Titmouse, are principally subject to these fits of anger, and in a small cage it is advisable not to put them with birds less strong than themselves.

In order to keep the Titmice in excellent condition they require a fairly varied diet; paste for insectivoræ—half-crushed seeds (hemp, sunflower) and fruits. Opened nuts are an excellent delicacy for their health. Finally, it is indispensable to supply certain species with living

food, such as mealworms. The aviary, which should be fairly large, must be supplied with nesting-logs which are used by most of the species to sleep in.

The Great Titmouse (*Parus major*) has a superb livery, marked with yellowish olive green and bluish grey. On the head a brilliant black frames the very white cheeks in the form of a triangle, and is found again on the neck, the throat and the middle of the abdomen where it forms a longitudinal streak. This streak is smaller and also less prolonged in the case of the female.

This Titmouse, which we encounter in all the country districts, and even sometimes in large gardens in towns, is lively and active. Of all the Titmice, it is the one whose song is most agreeable; between February and June its voice is very frequently heard. It has a clear and free call which somewhat resembles that of the Chaffinch. It nests in the holes of trees and also in cracks in old walls, sometimes in the abandoned nest of a Magpie or of a Crow.

The Blue Titmouse (*Parus cæruleus*), with its delicately coloured plumage, is the commonest member of the family. It has a blue head and white cheeks; a collar of a bluish black runs from the throat to the nape of the neck; a line of the same colour starts from the beak and connects this collar to the throat; another rejoins it at the nape and passes by the eye. Back, olive green; abdomen yellow, with a blue spot; wings and tail, bluish. The female has duller colours.

Except in coniferous woods, where it is rarely seen, it is found everywhere. By its habits and its movements, it resembles the Coal Titmouse; it is very impudent, and gets into every trap, and it is the hardest and fiercest of the family. It builds its nest in the hole of a tree.

The Marsh Titmouse (*Parus palustris*) is a small Titmouse with a modest livery, but it is perhaps the most lively and agile of the family. The top of the body is of a light reddish brown, the abdomen a light grey, a black cap descends very low on to the nape of the neck; the chin is of the same black, and the cheeks whitish.

It is a reduced edition of the Blackcap. It is very nice in the aviary on account of its vivacity and its dexterity in movement; on the bars and on the wire netting, it executes the most amusing

gymnastics. I have often seen my Marsh Titmice suspend themselves by one leg, head downwards, on the netting forming the ceiling of the aviary, and pecking at a piece of nut held on the other foot in the attitude of a Parrot. These Titmice become tame very rapidly; they nest in the holes of trees.

These three species of Titmice can stand captivity very well, for they can easily vary their insect diet with all sorts of seeds. They adjust these latter between their claws, and pierce them with marvellous dexterity by blows of the beak. They breed in a large aviary, and the Marsh Titmouse, allied to the Blue Titmouse, has sometimes produced beautiful hybrids bearing the hall-mark of their double origin.

Two other Titmice much less common than the preceding ones, frequent the coniferous forests together. The first is the Coal Titmouse (*Parus ater*), known also by the name of Small Coal Titmouse. The head and the top of the breast are black, the cheeks white and a spot of the same colour is on the nape of the neck, the top of the body ashy grey mixed with olive green, the breast white, tinted with grey, and two white bands on the wing.

Living especially on insects, it constantly examines the pines and the oaks, always making its little cry heard. With great foresight, it lays up supplies which it hides like the Nuthatch in the fissures of tree-trunks. In captivity it very soon becomes familiar, but retains this instinct, and the titbits which it takes out of one's hand, are quickly hidden away in the corners of the aviary. It frequently returns to visit its hidden stores, and sometimes it is the cause of a quarrel with a Blue Titmouse which has discovered the hoard. It also makes its nest in the holes of trees.

The Crested Titmouse (*Parus cristatus*) inhabits the same localities as the Coal Titmouse, where it finds the same food. It is a very pretty little Tit which can be recognized by its black crest edged with whitish-grey, which it continually erects. The mantle, wings, and tail are of a reddish grey, the throat and the front of the neck black; a collar of the same colour surrounding a wider white collar goes up as far as the occiput.

This Titmouse is extremely vivacious; it hops without stopping from one branch to another with energetic movements and the crest



SILVER-EARED MESIA
(*Mesia argenteauris*)

(1/2)

ASTLEY'S LEIOTRIX
(*Leiotrix astleyi*)

HARDWICK'S GREEN BULBUL
(*Chloropsis hardwicki*)

BLUE-WINGED SIVA
(*Siva cyanuroptera*)

FAIRY BLUE BIRD
(*Irena puella*)

GOLDEN-FRONTED GREEN BULBUL
(*Chloropsis aurifrons*)

in motion. It utters a call note resembling the rolling of a drum. In captivity it is charming, very sociable, not in any way fierce. It makes its nest in the hole of a tree, sometimes in an old Crow's nest; one day I had the surprise of finding a brood in an abandoned Squirrel's nest. In a large aviary it has been known to breed in a nesting-log. These two latter Titmice require a very insectivorous regime if they are to be preserved for a long time in captivity.

We now pass on to a small Titmouse somewhat different from the other species as regards its form and nidification. This is the Long-tailed Titmouse (*Ægithalus caudatus roseus*), a small bird measuring 15 centimetres in length, of which 8 represent the tail; its plumage is of fresh and velvety shades; the background is black and white, shaded with russet pink and ash coloured. The variety which we have seen in France has bright red borders round the eyes and traversed by a black band.

This Titmouse is much gentler and more peaceable than the other species; it frequents the woods and gardens. During the cold season it approaches human dwellings. Essentially insectivorous, it only feeds on insects of the smallest size and on their eggs. Its nest, in the form of a lengthened purse, is a little masterpiece of art and of patience, which is admirably made so as to be mistaken for the bark of the tree on which it rests.

The Long-tailed Titmice are interesting birds in captivity. During the first days they require a great deal of care, but as soon as they are accustomed to their new regime they become very familiar. Their graceful movements, the gentleness of their manners, are pleasant to observe. Sometimes the males utter a very shrill little song. They become accustomed to the aviary more quickly when several of them are together because, like when at liberty, they all follow one after another. In the evening they always assemble at the same spot, and they cuddle very closely together one against the other to sleep; they then form nothing more than a big parcel of feathers, from which the long tails emerge to the right and to the left.

The typical form of the species (*Æ. c. caudatus*) inhabits the north of Europe and of Asia, but especially in winter we sometimes find it among the troops of our resident Long-tails. These birds are

slightly larger than ours, and the head and the neck are of a pure white. For a certain time I kept some specimens of this species which had reached me from Eastern Prussia in my collection of Titmice.

Two other birds classed in another genus, connect themselves with the family of Titmice : the Bearded Titmouse, or the Reed Titmouse, and the Penduline Titmouse. These two birds, which are much rarer than all the others, inhabit swampy places.

The Bearded Titmouse (*Panurus biarmicus*) is greatly sought for by amateurs on account of its beauty and its attractive habits. The male has a russet brown coat, with the head of a fine ashy grey, on which stand out the fine black feathers forming the beard. In the females the top of the head is light brown, and there is no beard.

They feed on insects, small molluscs, and aquatic seeds ; they build their nests in the reeds and the male shares the duty of incubation with his female.

In captivity these Titmice are charming ; a single individual would certainly not live very long, for these birds, which are very affectionate, are always in couples and show great tenderness to one another. The male and the female constantly follow and ceaselessly caress each other, and sleep closely pressed against one another. They always require a big bath, for they bathe very frequently, and love to pursue each other in the water. It is useful, especially in a small aviary where everything is artificial, to fix some bars vertically, as these Titmice have the habit of perching in this way on the reeds.

Bearded Titmice have been induced to breed in a cage. I have had as many as six pairs of these birds ; they always kept together in couples, and frequently mated. It is very easy to keep them in good health by procuring for them, in addition to paste for insectivorous birds, seeds of white poppy, and especially of ordinary poppy.

The Penduline Titmouse (*Anthoscopus pendulinus*) is a smaller bird than the preceding one, and the plumage approaches more closely to that of the *Panurus* (Bearded Titmouse) ; it has no beard, but a black streak surrounding the forehead, the eye, and the cheek. This Titmouse is found in Southern Europe : South of France (Camarque, banks of the Rhône), Spain, Italy ; the South of Eastern Europe as far as Hungary, and the South of Russia. Seven other forms are found in Asia.

Like the Bearded Titmouse, the Penduline Titmouse is found in swampy places, and both have the same habits. Its nest is in the form of an infant's bootie; of all the European nests, it is the most curious, and the one most artistically constructed. In captivity, it is much more delicate than the Panurus (Bearded Titmouse); it is very comical and always in movement. It also requires vertical bars. Its call is very piercing.

Some species of Titmice inhabiting Asia and Eastern Europe have at times been reported in Western Europe, the Siberian Titmouse (*Parus sibiricus*), which is also called the White-belted Tit, and the Marsh Titmouse (*Parus lugubris*) of South-Eastern Europe, which is of the size of the Great Titmouse, and has the plumage of the Marsh Titmouse. One particularly pretty species is the Azure Titmouse (*Parus cyanus*), a lovely bird a little larger than the Blue Titmouse, but with a prettier coat of azure blue and white.

The foreign Tits are too rarely imported into Europe. These are, however, some very pretty species. From India the pretty Crested Titmouse with yellow cheeks (*Machlolopus xanthogenys*) has sometimes reached us.

This Titmouse, which is a little larger than our Crested Titmouse, has exactly its form and its movements. Back greenish grey, wing and tail black, with small white spots, head and abdomen golden yellow, stripes of a brilliant black arranged as in the case of our Coal Titmouse; the bird has therefore yellow cheeks framed with black and a well-developed black crest.

I have had several of these birds which had the same habits and the same calls as our Titmice. They appear to me very delicate, and require an enormous quantity of fruit. The following have also been imported:—

The Black African Titmouse (*Parus niger*) which inhabits the whole of this Continent except the North. It is bluish-black, the wings being spotted with white.

The Variegated Titmouse (*P. varius*) of Japan; the forehead, the cheeks, the lores, the parotic regions, and the sides of the neck are of a creamy colour; the remainder of the head is black with a white spot at the nape; russet shoulders; upper part of body bluish-grey; chestnut coloured below.

The Black-headed Canadian Titmouse (*P. atricapillus*) is of a light grey, lightly tinted with yellow, with the top of the head and the throat black, the cheeks, the lores and the sides of the neck white.

The Grey Indian Titmouse (*P. cinereus*) only differs from the Coal Titmouse by its considerably smaller size and the top of the body greyish-blue instead of olive green.

Several other very pretty Titmice have been introduced from the Himalayas, but they only lived a very short time: *Parus monticola*, *Ægitholiscus erythrocephalus*, *Lophophanes melanonotus*, and *Cephalopyrus flammiceps*.

Finally the two varieties of a South African species, a near relative of the Penduline Titmouse, have been imported, viz. *Anthoscopus capensis* and *A. c. caroli*. The first is light brown above, yellowish below and on the rump; the second has no yellow and the lower part of the body is fawn. The first named inhabits Africa from the Cape as far as Abyssinia; the second Damaraland.

THE SHRIKES

By J. DELACOUR and M. LEGENDRE

The Shrikes constitute the family of the Laniidæ. They are birds with a strong beak, very much compressed, and provided with stiff bristles at the base; the upper mandible is hooked and strongly serrated. The wing is short and rounded, but the tail very long and tapered. Lively, quarrelsome, and even cruel, they are small birds of prey, having the courage and the audacity of the larger birds of prey.

They live in the fields and the little woods, where there are large trees and bushes; their flight is rather poor and they constantly move the tail. Apart from their somewhat raucous and monotonous call, these birds have no particular song; they have, however, a curious talent for imitation and imitate perfectly the warbling of other birds.

The Shrikes are insectivorous and carnivorous, hunting not only the large insects but also small mammals and unfortunately birds, daring even to attack the large species. They have the curious habit of carrying off their victims into a bush and of impaling them on the thorns in order to be able to pull them to pieces more conveniently.

Their cup-shaped nests are very artistically constructed. This family is represented in all parts of the world except in South America, and a dozen species of different sizes appear in the fauna of Europe, of which five which are fairly common are found in France.

The great Grey Shrike (*Lanius excubitor*) measures from 24 to 25 centimetres in length; the top of the head, the nape of the neck, and the back are of a pretty ashy-grey, with a black stripe over the eyes, the wings are black with white spots, the lower parts pure white. This bird is widely distributed over the whole of Europe. Being sedentary (non-migratory), it becomes more common in winter near inhabited places; it then likes to perch on a high branch to survey its surroundings, and, just like a little Hawk, it drops on any prey whatever. Formerly it was trained for the chase, and it figured among the favourite birds of King Francis the First.

The Southern Shrike (*Lanius meridionalis*) is of the same size as the preceding one; it inhabits the South of Europe and the North-West of Africa. The upper part of the body is of a very dark ashy-grey, with a wide black streak on the sides of the head; breast and abdomen grey tinted with pink. Its habits are about the same as those of the preceding species, but it is perhaps even more audacious and more cruel to the little birds, large numbers of which it destroys. It builds a very voluminous nest.

The Italian Shrike (*Lanius minor*) is a very pretty bird which is also called the Pink-breasted Shrike. It inhabits not only the country whose name it bears, but also the whole of the South and Centre of Europe. Its back is of a light ashy-grey colour, the throat white, the breast and the sides as if glazed with pink, the forehead, the region of the eyes and of the ears black, the wings black with a white spot. This pretty Shrike is one of the most pleasing of the family; it is perhaps more insectivorous than the others. Its size is smaller than that of the preceding ones.

The Russet Shrike (*Lanius senator*) differs more from the other species; in this bird the head is of a fine bright russet colour, the forehead and the region of the eyes and of the ears black, the back and the wings black, the latter variegated with white, the lower parts whitish. It is found in Europe and in Africa. On its arrival in France it takes

up its abode in the orchards and copses and immediately starts breeding.

The Red-backed Shrike (*Lanius collurio*) is one of the commonest species ; it is also, with the Russet Shrike, one of the smallest of the family (17 centimetres). It is distributed all over Europe and in winter in the North of Africa ; it is very pretty, and the male bird in spring is truly remarkable for the brightness of its colours. The head, the nape, and the back are of a bluish ashy colour, the mantle of a chestnut russet, the throat pure white, the breast and the abdomen russet pink, with black round the eyes and ears. This little Shrike is hardy and courageous. It destroys a large number of small birds and, more than any other, it has the habit of spitting its victims on thorns and stocking its larder in this way.

In captivity the Shrikes are pleasing owing to their fine colours and their vivacity ; they very rapidly become tame and live a long time if they are provided with a mixed diet into which a great deal of meat must enter. They should therefore be fed on insectile mixture, small pieces of meat being mixed with it ; the best meat to give to the small species of birds is ox-heart placed for a few seconds in boiling water. They should also be given some live insects, mice, and the offal of some small birds.

The amateur who is interested in their habits can put in their cage a piece of wood provided with long nails, and the Shrikes will make use of the same to impale their prey. This little larder should be put in a corner of the cage, and high enough not to injure the birds in their flight.

The Shrikes are very good mimics, imitating the voices of other birds. Some repeat entire phrases of the song of the Lark, and of the Warbler, mixing with it the call of the Quail and of the Hoopoe ; it is a real jumble, which finishes up with the calls of the Jay. But the sanguinary instincts of these birds and their pronounced taste for living prey do not, of course, permit of their being kept in an aviary with other companions, as they frequently attack birds which are even double their size.

A certain number of exotic Shrikes have been imported. Those of the genus *Lanius* do not differ as regards their habits from our native Shrikes ; these are the *Lanius borealis* of North America and *L. lathora*

of Afghanistan and Northern India, which differ very little from the *L. excubitor* ; *L. collaris*, a fine bird from Africa, variegated with black, white, dark brown, and grey ; *L. cristatus*, which inhabits the whole of Eastern Asia and which is russet brown above, whitish below, with the head marked with black and white ; *L. vittatus* of India, with a grey and chestnut head, with the lower parts fawn, the face, the wings and the tail marked with grey, black, and white. These two latter species approach the Red-backed Shrike.

The Long-tailed Shrike (*Urolestes melanoleucus*) of South Africa is black, with the wings and the upper covering feathers of the tail marked with white. By its long tail it reminds one somewhat of the Whydah bird. It is a savage and stupid bird in captivity ; we have had individuals in our possession, and cannot recommend it.

There exist in Africa numerous and magnificent Shrikes whose plumage is frequently adorned with bright colours, especially red and green. They are more insectivorous and less rapacious than the Shrikes properly so-called. Although they are not more delicate in captivity than the others, they are very rarely imported.

Such are the *Laniarius atrococcineus*, of a brilliant black marked with white on the wings, with all the lower part of the body of a scarlet red : it inhabits South Africa ; the *Chloroponeus quadricolor* of South-Eastern Africa, green above, red and yellow below, with the head variegated black and orange.

Another group of Shrikes inhabits Australia and the neighbouring islands. The species which compose it are similar as regards their size, their general form, and their habits, to the Corvidæ ; they have the long beak, the well-developed wings, and the fairly short tail of the Crow. The best known to amateurs is very common in Australia, where it is called the Magpie (on account of its black and white plumage and its habits, which somewhat recall those of our European Magpie.) These large birds in their movements greatly resemble the Rook, with the beak less broad and more sharp pointed. This beak is white, passing to dark grey at the end ; the plumage is black above and below, with the nape, the back and the sides of the neck, the coverings of the wings, the lower part of the back, and the front part of the tail above and below of a pure white. There is another form which differs by its

stronger build and its entirely white back (*G. leuconota*). Certain individuals have a white back spotted with grey. However this may be, the Piping Crows are excellent aviary birds. They are almost always exceedingly familiar, and nature has endowed them, moreover, with a fluting voice and a great talent for imitation. They imitate perfectly all kinds of noises and songs, and can enter into rivalry with the Parrots; they even succeed in talking.

In captivity they are very hardy; the diet of the Corvidæ suits them very well (paste, meat, fruits, etc.); they are omnivorous. Cold does not trouble them at all. One can frequently even keep them at liberty, and they scarcely ever go away. One must, nevertheless, beware of their carnivorous instincts, as they may cause the same damage as the Magpies and the Crows. Some species of the allied genus *Cracticus* have also been imported, viz. *C. destructor*, *C. picatus*, and *C. cassicus*. These birds are more tree-loving; their beak is thicker at the end and terminates in a more apparent hook. Their plumage is generally variegated grey, black, and white. They are very attractive in captivity.

HOW TO KEEP INSECTIVOROUS BIRDS IN PERFECT CONDITION

By P. F. M. GALLOWAY

(Continued from p. 98)

THE REED WARBLER (*Acrocephalus streperus*)

This species is rather late in arriving in this country, one seldom hears or sees it until long after the Sedge Warbler has arrived.

I have generally first seen it about the 10th of May.

In ditches around water meadows where reeds and meadow-sweet flourish is their haunt, and also in osier beds, but never far from the river, as a rule.

I have known them frequent a large pool, overgrown with tall reeds, in the middle of a meadow where cows used to drink; this was about five or six hundred yards away from the river.

In this particular spot I have known five pairs breed, and



CEDAR WAXWING
(*Ampelis cedrorum*).

HIMALAYAN YELLOW-CHEEKED TIT
(*Machlolophus xanthogenys*).

WHITE-BROWED WOOD-SWALLOW
(*Artamus superciliosus*).

BEARDED REEDLING
(*Panurus biarmicus*).

BLACK-BACKED PIPING-CROW
(*Gymnorhina tibicen*).

for three years in succession have found a young Cuckoo in one of the nests.

This year, 1923, being a sunless, cold spring, almost up to July, the reeds did not grow to any height until much later than usual, the Reed Warblers not nesting till nearly the third week in July, and as the Cuckoo left soon after 21st June, well up to time, no Cuckoo's egg was deposited in the Reed Warbler's nest this year in this favourite pool.

The nest is a beautiful bit of work, being woven round three or four reed stems, and is very deep ; some nests, however, are quite an inch or more deeper than others. I have read in some works that the nest is lined with wool and hair.

Personally all I have found (and I have found many) have been lined with the brown blossom of the reed bloom or reed grass.

The flesh of the young when a few days old, before the quills appear, is almost a purplish shade, much darker than the young of the Sedge Warbler.

The wind may blow and the tall reeds rock backwards and forwards, but the young in their deep cradle are safe, even when the young are feathering and have filled up the nest they cling tightly to the fabric of the nest.

It is curious to find a Reed Warbler's nest in some reeds that have not fully grown, because when you visit it some time afterwards, the nest is much higher up the reeds, the reeds have grown and the nest, as it were, has grown upwards with them.

Not always do these birds build in reeds. I have found the nest in a lilac-hedge, also up in a pollard-tree some considerable height from the ground, woven to three of the twigs, also I have found it in osier beds attached to the rods.

The Reed Warbler is a fine songster ; they sing during the day, but to hear it at its best, stroll down to its haunt in the summer evening when the weather is fine and settled, at sunset, he then pours forth some lovely flute-like notes. They do not sing a hurried, chiding song, like the Sedge Warbler, but each note is delivered slowly and distinctly, and in fair variety. I consider the Reed Warbler a pleasing songster. I think I prefer it to the Garden Warbler.

This species is of a deep slightly reddish nut-brown all over the upper parts, the breast pale buff, lighter on the throat, under tail coverts also light buff, the outer tail feathers very slightly shorter than the centre, which does not give the wedge-shaped appearance as it does in its congener the Sedge Warbler; the rump is slightly chestnut in colour, the beak is rather long and the mandibles as flat almost as that of the spotted Flycatcher, there is also a short indistinct buff streak over the eye, the legs are greenish leaden colour, and the soles of the feet yellowish, the inside of the mouth bright orange.

These birds move about the tall reeds with great agility, chasing the small flies which their haunts are infested with, and they make a very audible snap with their beak in capturing the insects.

They explore the withy beds, climbing up quickly to the tender shoots at the top, and there devour the little bunches of purplish coloured blight that collect there.

The cage for this species should be about the size of that used for the Wood Wren.

These birds should have placed in the cage a few stiff portions of reeds and a few sticks placed upright at the back of the cage. They do not care for perching on the ordinary perches placed from back to front of the cage; they will, of course, do so, but are more at their ease on the slanting ones.

When I kept this species I fed it exactly as I did the Wood Warbler, or Wood Wren as it is called, as this species again is another which does not require fruit or berries.

Like the Grasshopper Warbler, it requires a little warmth in winter; it will devour mayflies and stoneflies, and in some seasons the former are so numerous that one switch into a cloud of them with a butterfly net will provide more than enough for a couple of days, but it is best to get a few at a time, as these insects if kept packed in a tin dry up. Of course, it is not essential that this Warbler should have these, but those who happen to have this bird, and live near brooks or a river, can easily procure them.

(To be continued.)

BREEDING THE RED-BREASTED CONURE (*PYRRHURA VITTATA*)

By W. SHORE-BAILY

Last year I sent you an account of the breeding of the Azara Parakeet (*Pyrrhura chiripepe*), this season I have been equally successful with the nearly allied *Pyrrhura vittata*, which comes from Brazil. Early this season I turned my little "Azaras" into an outdoor aviary, but when they had been there about a week the little wretches found a weak spot in the wire and ate their way out. The weather was very inclement at the time, and I had little hope of getting them back again. However, after about a week one of them was picked up in a dying condition, and the other was recovered a few days later not much the worse for his adventures. I should like to point out here the extreme importance of overhauling our aviaries occasionally, as wire netting even of the best gauge will not last for ever. Following the escape of the little Parrots, I had a still more serious loss. On entering their aviary one morning, my man managed to frighten my big Eagle Owls, from the Falkland Islands, and they flew straight through the wire and escaped. This aviary had been in use for nearly twenty years—the wire had no doubt perished. My consternation can be imagined when these fierce big birds got free, as I had valuable Pheasants, Ducks, etc., all of which had to be caught up and placed in shelters. After five or six days we caught one of the Owls with a Sparrow-net, but the other eluded capture, and was finally shot whilst devouring a Turkey belonging to a neighbouring farmer.

But to return to our Parrots, I was now left with only one, so I made a special visit to Chapman's, and found that he had three just landed from Brazil. I secured them at a reasonable price, and thought at the time that I was buying *P. chiripepe*, but on visiting the Zoo I found they had a pair of the same birds there labelled *P. vittata*. On inquiry at the British Museum, I found that the principal difference between the two species is that *P. vittata* has much more red upon the tail and lower back than *P. chiripepe*. This difference can be best seen when the birds are in the hand, as in flight they look exactly alike. On getting the birds home, I gave them their liberty in an aviary where the wire

netting was in good condition. One of them died, as did also the Azara, but the other two took possession of a nest-box, in which they regularly roosted at night. About the middle of July I missed the hen, and on looking into the nest-box found her sitting on five eggs, and on the 24th four young ones were hatched. Both parents fed them, and they grew fairly fast; but there was little sign of feathering until they were nearly a month old, then the white around the eye began to show, and a week later their heads were feathered and wings well grown, but it was not until 13th September that the first youngster left the nest. It was exactly like its parents, and active and strong on the wing. Three others left the nest in due course, all very nice birds. From the first they nibbled away at apples, of which they are very fond, although both parents fed them for a week or two after they left the nesting-box, to which, by the way, they regularly retreat at nightfall. These little Conures are charming little birds and as playful as monkeys, but I can quite imagine that they would do some mischief in a sparsely planted aviary. I believe that this is the first time that this species has been bred in captivity.

[Can any member quote a previous record of the breeding of this Conure?—ED.]

A TAME RED-VENTED PARROT

By P. KINGSFORD VENNER

I am the owner of a charming little Red-vented Parrot. I believe these little birds are somewhat rarely imported. "Baby," as I call her, is exceedingly tame, quite the tamest bird, with the exception of my Leadbeater Cockatoo, which I possess. I purchased her last winter from Manchester, being informed that she was a "Blue Mountain Lory". She arrived on a damp, unpleasant December evening, but at once made herself at home, and although packed after the manner of chicken in a rough box, with no covering beyond several strips of wood nailed over the top, she was none the worse for her journey. I saw at once that the only resemblance to a "Blue Mountain" was her head, and at once had a vague idea of her species, which was confirmed when I looked up the Red-vented Parrot in Butler's

Foreign Birds. She soon learnt her name—which I gave her on account of her small size (not much more than half that of an Amazon)—and says it in a small husky voice. She also has a sweet little cooing note like that of a Dove, and a pretty whistle. She had been taught the inevitable “Polly” before I had her, and says that in two totally different tones, one the small husky one, the other a clear little voice like that of a small child. The latter is only used as a request to come out of her cage, which she loves doing, and she generally prefixes it with “pretty”. I notice that Butler states that the Red-vented Parrot is “a hateful screamer”. This, as far as “Baby” is concerned, I deny. She indeed has a funny little cry, something like “Kike-Kike” or “Keek”, which she utters when she sees any strange object, but this is not to me unbearable at all, like, for instance, the ear-piercing note of the Lorikeets, etc.

She sometimes carries on long conversations with herself in a husky “sotto voce”. What she says then, I don’t know. She adores coming on one’s shoulder, and will frequently fly thither when loose. I have had her in the garden, but she is not a very good homer, unless one happens to walk under the tree or bush in which she is, when she will fly suddenly down on one’s head or shoulder. I feed her on sunflower seed, oats, monkey-nuts, etc., fruit, which she loves, and green food, including cooked vegetables, and sometimes a little bread and milk. She is very friendly with other Parrots, etc., and quite fearless. She frequently used to enter the cage of a Rosy-breasted Cockatoo I possessed if the door was open for a moment, and the two were on very good terms, although the “Galah” resented her at first. She also, if I put her in my aviary when she is *too* importunate, has great games with my Red-collared Lorrikeet. But she cries loudly if I leave her there long, liking human society better than feathered. I may mention that I call Baby “her” because, judging from Butler’s remarks, the red under “her” tail is hardly dark enough for a cock bird, being a bright rosy red, with no tinge of crimson (to me). I have already somewhat bored you, I am afraid, but since you also require notes on the Lories (not Australian) I may add that I have a splendid “Purple Cap”, very tame, who goes by the name of “Lucifer,” partly from his gorgeous crimson-scarlet red and partly from his disposition, which, as far as other birds

are concerned, is not very amiable. I have had him for nearly a year, and feed him on oranges, bananas and any other fruit, and sweetened bread and milk, sometimes a little moistened cake (especially "sponge"). I have seen that milk sop is injurious for some Parrots, but Seth-Smith believes in it for Lories. "Lucifer" has always been in grand condition.

I have lately turned him into my big bird-room, as somehow I dislike keeping even the Parrot tribe in cages. He has turned over a new leaf here, and appears to be quite harmless. I watched him most carefully at first. In conclusion, should you care for a few notes on what I believe is the tamest and most affectionate Leadbeater—indeed, I might say Cockatoo—in existence, I shall be happy to let you have them.

CORRESPONDENCE

BIRD OF PREY *VERSUS* CARNIVOROUS MAMMAL WITH "WARNING COLORATION"

SIR,—The account of the "Carancho" page 40, line 25, which was evidently a southern Carrion Hawk known as *Polyborus tharus*, killing a "crop-eared sharp-toothed animal", line 23, found "partially eaten", is of special interest as evidence on the question whether a carnivorous-toothed mammal, in which the coloration is conspicuous, and often called "warning" by naturalists, can successfully beat off the attacks of a formidable bird of prey.

The mammal was evidently a Grison, known scientifically as *Galictis vittata*. It is one of the musteline carnivora allied to Martens, Weasels, etc., having a short, broad head, long body, short legs, and tapering tail of moderate length. In behaviour they are fearless, and anyone who has seen two Grisons fight each other can realize the mammal would fight vigorously against a bird which attacked it!

The colour which makes it conspicuous to enemies is the fact that upper parts, such as crown of head including the ears, back of neck, and back are very pale and of a whitish grey; whereas the under parts are much darker, of a dark brown or blackish (this being the opposite plan of coloration to that of many other mammals).

Now, while on the one hand the pale upper parts may act as a "warning" to wild cats and foxes in S. America, *not* to attack a Grison again after being once repulsed in a previous fight; on the other hand, the evidence on page 40 shows that such colour is *no* protection against Carrion Hawks—which presumably have an advantage in being able to descend in flight and attack the Grison in the back and adjacent parts (which wild cats and foxes obviously cannot).

From what I remember of skins in Kensington Museum, seen some years ago, Grisons range extensively over Brazil, into Peru, etc., and Central America; so there is every reason to suppose that conflicts between them and Carrion Hawks are not such rare occurrences as some people think. Besides being called Huron in Argentina, I believe it correct to say another name for the same mammal is Furaio in Brazil. The name Grison is founded on the grey colour above referred to.

FREDERICK D. WELCH, M.R.C.S.

A QUARREL BETWEEN GEESE—TWO *VERSUS* EIGHT

SIR,—On 1st April, when walking alongside the water in St. James' Park, London, I came upon a rather amusing quarrel.

Two South African Upland Geese, *Chloephaga magellanica*, a male and female, were walking about on the land close to the water's edge, both angry and using their voices, and were keeping eight other Geese, which were in the water swimming in a flock, from landing at that particular spot, they being two Indian Bar-headed Geese, *Anser indica*, and six European Bernicle Geese, *Bernicla leucopsis*. During the time I watched them, the eight made attempts to land, but were always repulsed out to water again by the South American pair, the latter showing more vigour in the quarrel and being clearly more than a match for their opponents, even though the latter were four times as numerous. No signs of eggs could be seen, but the Uplands had presumably selected the place for future breeding purposes. A working man, who was watching them on my arrival, told me the conflict had been going on for about a quarter of an hour.

FREDERICK D. WELCH, M.R.C.S.

RECORD OF TINAMOUS WHICH HAVE BEEN BRED IN CAPTIVITY

SIR,—In reply to the query on p. 20 of the January number, I know of no earlier record of the breeding of the Cinereous Tinamou than that of Shore-Baily's last year.

My record now (including this recent one) stands as follows. I shall be glad to hear of any additions or corrections needed. The initials WTP at the commencement of an entry mean that the species was included in Page's *List of Birds which have been bred in Captivity*.

633. TATAUPA TINAMOU, *Crypturus tataupa* (Temm.).

WTP. First breeder, Seth-Smith, 1904. A.S. Medal. See *Avic. Mag.*, n.s., ii, 285.

633 A. CINEREOUS TINAMOU, *C. cinereus*.

First, Shore-Baily, 1924. Two broods from two hens, the first fully reared, the second not, though some lived as long as six weeks. See *A.M.*, 1925, 18.

634. RUFOUS TINAMOU, *Rhynchotus rufescens* (Temm.).

WTP. At the Zoo, 1912; see Report. In America bred by Rockefeller. See L. S. Crandall, *New York Zoolog. Bulletin*, 1917, 1449. In *B.N.*, 1922, 42. Shore-Baily reports nearly complete success in 1921, one of the young living three months.

635. PARTRIDGE TINAMOU. WTP. Error, see 636.

636. SPOTTED TINAMOU, *Nothura maculosa* (Temm.).

WTP. Zoo, 1888 (see *A.M.*, 1909, 53), 1912, etc. (see Reports. Also bred by Barnby Smith in 1908; see *A.M.*, 1908, 300, where the species was recorded as *Nothoprocta perdicaria* (Kittl.) but this later was found to be an error; see *A. M.*, 1909, 52.

637. MARTINETA TINAMOU, *Calopezus elegans* (D'Orb. and Lafr.).

WTP. Seth-Smith in *A.M.*, 1904, 104, writes: have been bred at the Zoo two or three times and also in France in 1903 (Delaurier). More recently they were again bred at the Zoo, 1912; see Report.

E. HOPKINSON.

THE ANNUAL MEETING will be held in the Zoological Gardens on Saturday, 18th July. Tea, to which all members are cordially invited, will be served in the Fellows' Tea Pavilion at 4 p.m.

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THE PRIONOPIDÆ, ARTAMIDÆ, WAXWINGS, AND VIREOS (GREENLETS)

By J. DELACOUR

In this chapter we have put together several families which have no very close links with one another, but only few representatives of which are imported, and the insectivorous diet of which is more or less similar.

I. THE PRIONOPIDÆ

These birds, although approaching fairly closely to the Shrikes, form nevertheless a fairly distinct family. In external appearance they rather resemble the Thrushes with their long legs, but their beak is thicker. They are found especially in Oceania, but some genera also inhabit Asia and Africa. They are insectivorous. One single species appears to me to have been imported sometimes, and that is the Australian Magpie Lark (*Grallina picata*) which indeed is of very different aspect to the other *Prionopidæ*. It is of the size of a Thrush, but has a peculiar aspect with its long, black legs and very short toes. Its beak is white; the upper parts black with the wings and the tail spotted with white; the head is black with the forehead wide, eyebrows, the cheeks, and the sides of the neck white; the throat and the breast are black, the remainder of the lower parts white. The female is distinguished by its white mask and throat.

This bird is found in Australia, and it is common wherever there is water. It lives on the high banks of the watercourses, like our Wagtails. Its nest, in the form of a cup, is placed on the large horizontal stones which rise above the water, and is made mainly of mud.

In captivity the Magpie Lark is hardy and is satisfied with the Thrush's diet.

The *Vangidæ* constitute an allied family very similar to the Shrikes ; they are insectivorous. Their habitat is Madagascar and the adjoining islands. None of them have been imported up to the present.

II. THE ARTAMIDÆ OR WOOD SWALLOWS

This family is very homogeneous, and is composed of curious birds with a thick and moderately long beak, with very long and very pointed wings reminding one of the Swallows, with short tail and legs. They are found especially in Australia, but several species also inhabit other parts of Oceania, the Indies, and Malasia ; one species is even found in West Africa.

They are migratory birds ; they fly a little, like the Swallows, in search of insects, but constantly return to their branch. They frequent the wooded banks of watercourses and of tarns, and they nest in the large forks of the trees and build cup-like nests. In addition to insects they are also very fond of the nectar of flowers.

The *Artamidæ* live perfectly well in an aviary on a good insectivorous diet, and have even bred in England. The young are only fed on living insects.

So far as I know, three Australian and one Indian species have been imported, but these birds are nevertheless still rare in captivity.

The Swallow of the Woods, or Masked Wood Swallow (*Artamus personatus*), measures about 20 centimetres in length. The plumage of the male is slaty-grey above, light grey below, with white at the end of the tail, and a black mask bordered with white on the cheeks. The female has a less distinct dark grey mask, and the lower part of the body fawn-coloured.

The white eyebrowed Wood Swallow (*A. superciliosus*) is of the same size. The male is dark grey above with black cheeks and a wide white eyebrow, the throat and the breast dark grey ; the lower

parts brown, the tail ending in white. The female is duller and has less pronounced colours. This is the species which bred in Mr. Brook's aviary in 1908, and has bred in the London Zoological Gardens.

The Dusky Wood Swallow (*A. sordidus*) is a little smaller. It is of a dark brown with dark grey wings and tail marked with white.

These three species inhabit Australia.

The Brown Wood Swallow (*A. fuscus*) is met with from India to Southern China. It is of a dull grey above, with the head and the neck lighter, the chin and the cheeks darker, and the tail tipped with white ; the lower part of the body is of a vinous brown.

III. THE WAXWINGS

These birds constitute the little family of the *Ampelidæ* and are met with in the North of Europe, of Asia, and especially of America ; some species are found as far South as Central America. The Waxwings are birds of heavy form and short and rounded beak, and the head surmounted by a crest. Their tail and wings are often adorned with brilliantly coloured patches. They are mainly berry-eating, but also feed on insects. They seem rather erratic, especially the European species which, during certain years, undertakes great migrations ; thus from time to time we see them arriving in large numbers in the West of Europe.

The Waxwings are very pretty birds, and their plumage is of a remarkable silky appearance. They are very gentle in captivity, indeed even slow and placid, and thrive on the diet of Thrushes, viz. paste and fruit, soaked currants being very useful.

The European Waxwing (*Ampelis garrulus*) also called " Bohemian Chatterer ", lives in the northern regions of the two hemispheres. Its length is about twenty centimetres ; its plumage is of a silky grey shaded with brown ; the forehead, a stripe passing across the eye, and then rising to the top of the head, the chin and the throat are black, with a white line under the eye ; the forehead and the cheeks are tinted with russet ; the head is adorned with a large vertical crest which the bird lowers towards the nape of the neck at pleasure. The wings are magnificently coloured, marked with black and white, and ornamented with yellow and red waxy patches. The tail is dark grey,

tipped with yellow, while the sub-caudal feathers are of a bright brown.

The Cedar Waxwing (*A. cedrorum*) is met with in North America and as far South as Cuba and Jamaica. It resembles the foregoing bird, only differing from it by its generally more yellow colour, its olive yellow abdomen, and its less brilliantly marked wings. It is also considerably smaller. It is a very popular bird in the United States; it is imported from time to time, and lives very well in captivity.

Two allied species have been imported exceptionally, viz. the *Phainopepla nitens* from the south of the United States and from Mexico, the male of which is entirely of a brilliant black with a long and tapering crest and the tail and feet are longer than in the case of the Waxwings; and the *Ptilogonys cinereus* of Mexico, a fine bird without a crest, of a bluish grey with a white forehead, the wings and the tail partly black, the sides and the sub-caudal feathers yellow.

IV. THE VIREONIDÆ (Greenlets)

The Vireos (Greenlets), although related to the Shrikes, in every way resemble the Warblers and have similar habits. They are small birds, all American, which are distinguished by their rather stronger beak terminated by a more pronounced tooth, than that of the Warblers and the *Mniotiltidæ*. From the point of view of aviculture, they are only of small interest because their plumage, although gracefully variegated in grey, white, and olive yellow, is not very brilliant. So far as we know, one single species has been imported into Europe, the Red-eyed Greenlet (*Vireosylvia olivacea*) which is entirely of an olive green, lighter below, with the top of the head of a slaty grey; an eyebrow, a spot under the eye and the throat whitish, and a black line across the eye, which is of ruby colour.

In captivity the Greenlets require the diet of the small insectivorous birds.

DONALDSON'S TOURACOU

Within the last few years several very fine birds have been introduced to aviculture from Abyssinia, a country whose fauna was little known but a few years ago. The French have been capturing and importing birds from there somewhat freely, and it is to be hoped they will not overdo it.

The Abyssinian Lovebird, unknown a few years ago, has now become common, and the showy Superb Spree now inhabits many aviaries. More recently still, the lovely Royal Starling (*Cosmopsarus regius*) has been imported in small numbers, while last of all has come a fine Touracou (*Turacus donaldsoni*), quite a number of which appear to have reached Marseilles, from which a fair quantity have drifted to London.

This Touracou was described by the late Dr. Bowdler Sharpe in 1895 and named after Dr. Donaldson Smith who first obtained specimens in Western Somaliland. A good coloured figure by Keulemans was published in the *Proceedings of the Zoological Society* for 1895. It is a very fine species hardly excelled in beauty by any of the genus, which contains some of the most lovely and attractive of birds. Like most of the genus its prevailing colours are grass-green and deep blue, with carmine primary wing-feathers. The chief distinguishing features are found in the coloration of the head. The rounded crest is of a delicate pink at its extremity, while in front of the eye is a conspicuous white spot and a white streak crosses each cheek. The bill and skin round the eyes is bright red.

Touracous have never been common birds in captivity because they were never imported in any numbers formerly; single examples arrived, generally from the west coast of Africa, where the local species is often known as the "Clock-bird". Consequently, the breeding of these birds in captivity has been a very rare event; but with the arrival of a number of *T. donaldsoni* aviculturists have a very fine species to experiment with. Its nesting habits appear to be unknown, but there is little doubt that these do not differ from those of other members of its genus which build an open nest of sticks like that of a Pigeon, and lay some four or five white eggs.

D. SETH-SMITH.

THREE RARE PARRAKEETS AND THEIR MANAGEMENT

The Blue-winged Grass Parrakeet (*Neophema venusta*) deserves special care, both on account of its beauty and because it appears to be on the verge of extinction. It has many peculiarities, ignorance of which is likely to bring disaster. Like the two previously mentioned species, it begins to do badly if kept in a fixed aviary for any length of time. It is absolutely necessary to protect the top of its cage with canvas and the top of its aviary flight with string netting, otherwise sooner or later it will dart up against the wire in sudden alarm and fracture its skull. During hot weather some branches should be laid on the top of the aviary flight, as it is rather liable to sunstroke. To prevent the birds biting the string netting in the aviary flight a smooth board about twelve inches wide should be fixed immediately below where the netting joins the sides. They have then no foothold, as they are poor climbers. It is decidedly risky to attempt to winter Blue-wings out of doors, and they are best brought in towards the end of October and kept in large flight cages until the following May. These cages must be really large, otherwise the hens will get too fat during the winter and go wrong when laying their eggs. Blue-wings do not seem to thrive flying loose in an indoor bird-room. Their quarters must be kept scrupulously clean, as they get tuberculosis and septicæmia on the slightest provocation. Pairs will not agree together. Blue-wings are fond of green food, particularly groundsel. The hen has a much less vivid blue frontal band, and the blue on her wings is also less intense.

During the past few months there have been small importations of three interesting species of Parrakeets which sometimes do not reach this country for years together. None of them are altogether easy to keep, and to prevent disappointment and loss for those who may have bought them a few notes may be helpful.

The Rock Peplar Parrakeet (*Polytelis melanura*) seldom survives more than a year or two unless kept in a large aviary with a grass bottom, *which is moved on to fresh ground every year*. Managed in this way they are no trouble at all, breed freely, and should live half

as long as their owner. Ordinary care needs to be taken to protect them from chills when they first come over, but once through their first moult they will stand almost any amount of cold and wet. They should be fed on the usual seed mixture with plenty of fruit, a morsel of sponge cake, and a few mealworms if they will eat them. The male, after the first moult, gets a blue-black tail, and the female has always a green one. Rock Peplars like a deep nest-box, the interior being made climbable by wire netting tacked to the wood.

The Yellow-bellied Parakeet (*Platycercus flaviventris*) also needs a movable aviary with a grass bottom; kept in the usual type of fixed aviary it is very subject to all manner of infectious diseases, especially septicæmia and tuberculosis. It does not need artificial heat, but must be induced or compelled to roost in a place well protected from wind, wet, and draughts. In other respects it should be treated like a Rosella: it is often fond of mealworms. The female has a much smaller head and beak, but in plumage she resembles the male.

TAVISTOCK.

OUR QUEST FOR THE MEXICAN WILD TURKEY AND HOW IT ENDED

By JAMES B. HOUSDEN

A suggestion has been made to me that I should write my experience of an adventure that befel me in my search for the Mexican Wild Turkey.

I would first say to any of our members who may have the pleasure at any time of journeying in those beautiful mountains, "Do not do as the writer did, venture into these lovely forests, even with a guide, without first taking your bearings and providing yourself with a good pocket-compass." Perhaps the writer felt a little too self-confident.

I am copying from my journal sent home at the time, the entry being headed "How I got lost in the Rocky Mountains of the Far West". Our ranch house stood in the southern part of our twenty-square-mile ranch. We had staying with us for the benefit of his health an ex-officer of the American Army, a Mr. McG—. I found him a very genial

companion ; an archæologist who knew the country well, he was also a great help to me in the study of American birds ; he had taken me long distances in our “ Ford ”, and I found him a very reliable driver over those rough roads. He had taken me up one of the highest peaks on the ranch to the graves of some Pawnee Indian chiefs ; apparently no one ever visited these lonely graves of the Red men ; years ago someone had opened one of these, and I brought away some pieces of pottery I found lying near. Some beautiful birds frequented this spot.

My friend suggested that we should go in search of the Mexican Wild Turkey outside the ranch, locally known as Blackbeard.

From my bedroom window I had a very charming view. The wonderfully clear atmosphere of the mountain plateau makes the hills appear to be considerably nearer than is actually the case ; one range visible from our house was, I was told, 250 miles away. While I was at the ranch a forest fire broke out and our nearest neighbour was the Forest Ranger at a distant town. I saw him call out the fire-fighters, coloured and white, chiefly Mexicans ; this occurred in what is called the black ranges, 70 miles away, but it certainly looked much nearer the three days it was burning.

We arranged to have breakfast and start at daybreak. There was a brilliant blue sky and already the sun was intensely hot. We were soon outside the fence of the ranch : lovely and strange trees and flowers—juniper, cherry, pinyon, cotton-wood (a lovely large green tree), immense pines, real patriarchs of the forest—“ live oaks ”, as these trees are called, green all the year round. There were also many bright red and yellow cactus-trees. Some of the large pines were dead, and had become the homes of bright and beautiful Woodpeckers ; others had fallen, and lying prostrate for years had become the abodes of vast swarms of red ants. On a distant mountain range was the eyrie of a pair of White-headed Eagles.

We journeyed along, small flocks of Californian Quails racing along the track in front of us, and other birds, which I believe were the beautiful Gambel's Partridge, flew across the ravine before we got very near to them. We walked a long way, crossing canyons and gulleys, and came to a very beautiful spot more open than most parts

of the forest with a background of forest-clad mountains. Several beautiful Hawks were flying about, and here we found our first traces of the Wild Turkey. We walked along in Indian file for some time, and found that the Turkeys had gone into the more jungly part of the forest. My guide suggested that we should cover more ground in looking for the nests, so we parted. Every few minutes he whistled and I answered him; we had both agreed to keep going straight ahead. After a time I came to a very thick part of the jungle. I tried for some time and found I could not get through; I turned back and tried to get through to him; this was a fatal mistake. My guide went on thinking I was through, while I went back along a ravine and whistled but got no reply. I also put my hands up and coo-eed, but there was no response. I then went along a canyon and hurried on, but went from bad to worse in trying to find my way. I retraced my steps and wandered on for a long time. It became intensely hot. I coo-eed from time to time but no response came.

My nephew a few days before, in a very serious way, had said to me: "Uncle, if it is ever your misfortune to get lost in these mountains don't get panicky; it is fatal for anyone to get into a panic; stop, sit down, and quietly think over the situation; try to locate the sun, or any of these mountain peaks behind our house." There were too many trees to do this where I was. A week before I had visited, some miles from our ranch, "Dead Man's Camp." Some years ago a white traveller was murdered by Mexican bandits who took all his belongings, and his body was found buried in the canyon. I had given up looking for the Wild Turkeys, and was now anxious to find my way home. I was parched with thirst and I must admit I became a little nervous. The intense silence was surprising; in this vast forest one could almost hear the falling of a leaf. It required a very little stretch of imagination to see a band of hostile Indians or Mexican bandits in that lonely forest, and then I remembered that this was also the home of two species of bears. On the ranch we knew of a large cougar, while a pair of fierce timber wolves (the Lobo of the natives) had killed a number of kids from the flocks of Angora goats. There were also some coyotes, and a number of tiger cats had been trapped and killed on the ranch.

I was quite unarmed, having only a walking-stick, and thinking of all these animals made me hurry along and not rest. By this time I began to feel very faint ; it was a terribly hot day, my lips were cracked and swollen, my tongue and throat parched. I searched about hoping to find some spring, but was unsuccessful. All this long day I had no food, neither did I feel hungry ; only this great thirst. It certainly was a very trying position for one to find himself in who had passed the allotted span of life.

Time passed on, and as I did not return everyone got alarmed on the ranch and search-parties were sent out. H., my cowboy friend, made great efforts to find me ; he tracked me a long way along the canyon and across the ravines, but lost the trail as I had returned part of the way back. Mr. McG— and others did the same ; unfortunately for me, my nephew was away 200 miles from home, on the Rio Grande River.

At times I felt I could not go any further, then I remembered I had booked my passage four months before in the White Star ss. *Majestic* and should soon be homeward bound with all my collection of plants, etc. (no bird skins). This was an inspiration for me to keep on under very trying circumstances.

While I rested on the mountain side (it was very steep) with one foot on a fallen tree—I could not sit down as there were swarms of red and black ants everywhere—I thought I caught the sound of the tinkle of a goat or cow bell a long distance away. We have outside our kitchen on the ranch a large bell hung between two trees, a very loud-sounding bell. This is used to let the Mexican herdsmen know the time for meals on the distant mountains. My niece could not go out with the search-parties : she was the only one left at the ranch, so thought she would keep the bell ringing, and I might perhaps hear it. I found afterwards it was the ranch bell I heard.

I turned and walked in the direction of the sound. Afterwards I came to a little cultivated patch. I said to myself, “ Surely I have reached civilization again ” ; I found this was correct. Soon afterwards I met an old coloured man ; he looked at me with mute astonishment. I was feeling very faint, covered with dust, and must have looked like the Prodigal Son. He saw my plight and hurried to get

me a drink of water. I have been a water-drinker for a life-time, but I think that mug of water, although quite hot, was the sweetest draught of water I have ever tasted. I sometimes wonder if that old coloured man realized what it meant to my parched tongue and throat. He was most kind to me, and made me rest for some time. I got him to understand I wanted Silsby's ranch; he put up his hands, shook his head, and made me understand I was going away from it.

As I knew everyone would be so anxious about me and I was eager to get back, he went some distance with me and pointed out the way. I left him with grateful thanks.

I found I had still a long way to go. I noticed a large number of the beautiful Crowned Jays flying in front of me. I reached the top of a very high hill, and fortunately for me my niece saw me painfully struggling along.

* * * * *

Some time afterwards I woke from a deep sleep. I was covered with dust, and found I was lying on the sofa at the ranch. I felt devoutly thankful. I must have walked miles that day.

After a few days I was apparently little the worse for my unique adventure. I may add the only Mexican Wild Turkeys I saw were those in "still life" in the New York National Museum.

DUCK BREEDING RESULTS, 1924, AT DEREHAM

By HUGH WORMALD

As far as weather was concerned, the season of 1924 was the worst I can remember during the early part of the time, April and the beginning of May being very cold and wet. No young birds dislike cold rain more than ducklings, and none of these so much as Carolinas. I lost the whole of my first hatch of Carolinas, some 25 in number, between 25th April and 10th May. This was entirely due to cold east winds, no sun, and much rain or drizzle. I am, in consequence, going to erect some sort of garden frames before the hatching season this year, with movable glass "lights". Young Carolinas alone should pay for the cost! Mandarins are very much hardier than Carolinas, and fortunately nest rather later, and losses were negligible.

Fertility all through was very high, considerably better than usual, due, I fancy, to the fact that the breeding birds were supplied with meat meal during February, March, and April.

On the whole, last season was much the most successful I have ever had. I obtained eggs from 26 species out of a possible 28, the two species which failed to go to nest being Chestnut-breasted Teal and Canvas-backed Ducks. The latter may not have been old enough to breed, although last season was their second spring and the ten birds were properly paired. They are still alive and I am likely to get them to breed this year.

I suppose that I am the only person who has kept Chestnut-breasted Teal without breeding them! I have seen nests in friends' collections, but have never seen an egg here. This species will, in all probability, die out before long, as every bird in Europe to-day is descended from a pair brought over from Australia in 1908 by Mr. Seth-Smith, and unless somebody can import some fresh blood from Australia, I think the race here is doomed. The breeding birds in this country now lay a great number of infertile eggs, and nearly all the young birds which are reared are ducks. A pair in the late Mr. E. S. Montagu's collection laid three clutches of eggs last year and not one fertile, and Mr. St. Quintin tells me that he had a large proportion of infertile eggs from his birds. It seems a great pity that we cannot obtain some fresh drakes from Australia, as this is a free-breeding Duck in confinement (except here!). Perhaps the most interesting nest here last season was that of the Common Scaup. This species has twice bred at Lilford, but I believe nowhere else. But what made it interesting here was the fact that both parents were not ten months old when they went to nest. All the recognized works on Ducks tell us that Scaup do not assume fully adult plumage or breed until their second year! but the birds were absolutely perfect by January, 1924, though hatched on the 11th July, 1923, from eggs sent to me from Iceland. I showed them to several first-class ornithologists, Mr. St. Quintin, the Hon. E. S. Montagu, and Mr. Jim Vincent (watchman and head keeper at Hickling Broad), and they all agreed that they were fully adult.

I fail to see how it is possible to tell the age of a nesting bird in a wild state, and it seems to me that because good naturalists see

a certain number of obviously immature non-breeding birds in May, June, and July, they immediately assume that no birds of that species either assume their full dress or breed until they are two years' old. I think it is quite probable that a great number of Scaup do not breed until their second year, but I am perfectly certain that still more do so. I reared several last season both from eggs laid here and from eggs sent to me from Iceland, and several of these drakes are, in plumage, indistinguishable from my old drake *when on the water*, the only part they have not moulted clean out from their juvenile plumage being on the belly, and these feathers will be moulted a pure white by the end of February, and the birds in full adult plumage and, I hope, will breed, in May.

While on the subject of Scaup it may be of interest to note that they share with Red-crested Pochards a habit that I have never seen in any other Duck. Just before the female goes to nest the male continually makes short rushes at her from behind with open bill, though he never actually touches her, and when one sees a Scaup or Red-crested Pochard drake doing this you may be certain that the duck will lay within a week.

I imported a pair of Lesser Scaup from Canada which arrived together with some Blue-winged and Green-winged Teal about Christmas, 1923. These birds I had hand-reared for me in Canada in the summer of 1923, and here again the "books" caused me to make a bad error!

I read that the Lesser Scaup does not breed until the second year, and it so happened that there was an unattached American Wigeon ♀ on the pond, and I noticed in April that the Lesser Scaup drake was making advances to her, but believing that his own duck would not lay until this year, if then, I took no steps to prevent the drake mating with the American Wigeon ♀ if he wanted to. Imagine my disgust when it became clear about the middle of May that the Lesser Scaup ♀ was going to nest (for the first time in this country!). I caught up the American Wigeon ♀ in the hope that the Lesser Scaup ♂ would turn to his own ♀, but he took no notice of her, and in a few days she had begun to lay! I never saw any drake take the least notice of her, but on principle set her eight eggs, and to my astonishment two proved

fertile, duly hatched, and grew up to be a pair of hybrids between the Common Scaup ♂ and the Lesser Scaup ♀, and this while the Common Scaup's own duck was daily laying fertile eggs to him! This pair of hybrids are now in M. J. Delacour's collection, and are about intermediate between the two species.

In December, 1922, I imported some Redheads and Canvas-backs from Canada. The latter, as stated above, did not breed, but from two Redhead ducks mated to one drake I got 49 eggs last spring, most of which hatched and were reared. I believe this to be the first time this species has bred in this country. These ducks were parasitical, and laid in Yellowbills', Pochards', Mallards', and other Ducks' nests, and Mr. John C. Phillips, the author of a magnificent work on the Ducks of the world, of which three volumes have now been published, tells me that they are parasitical in a wild state. I should like to draw my readers' attention to Mr. Phillips' book, the letterpress of which is quite excellent, with very good information on birds in confinement, and is far and away the most comprehensive work yet published on this most interesting family of birds.

Both the Blue-winged and Green-winged Teal imported with the Lesser Scaup nested and the young were reared, the Green-winged Teal being the first to be reared in this country as far as I can find out. (In any case I am not eligible for a medal as all my Ducks' eggs are hatched and reared under Bantams or Hens.)

The following is a list of the species which laid eggs here last season:—Carolina, Mandarin, and Spot-billed Ducks, Yellow-billed Ducks, Chilian Pintail, Bahama Pintail, Common Pintail, Shoveler, Common Wigeon, American Wigeon, Chiloe Wigeon, Falcated Duck, Common Teal, Green-winged Teal, Blue-winged Teal, Cinnamon Teal, Chilian Teal, Common Pochard, Red-crested Pochard, White-eyed Pochard, Redhead, Rosy-billed Duck, Scaup, Lesser Scaup, Tufted Duck, Gadwall, and I hope this year to improve on this list with two or three other species which I have since obtained.

In addition to the above list, a few other species were reared here from eggs obtained through the kindness of friends, viz. Gargang Teal, Common Shellduck, Barrow's Golden-eye, and one Harlequin! This last was one of three ducklings hatched from eggs sent to me

from Iceland. These three little Harlequins would look at nothing in the food line at first, until I thought of live ants' "eggs" floated in shallow trays, when two of them began to feed well, and looked like doing, but one suddenly went off-colour and died, the other—a drake—grew up and to my lasting regret was killed by a stoat in October!

I sent three of the Barrow's Golden-eyes to M. Delacour, but by some mistake on the part of the shipping agents they were delayed three days and arrived dead, and unfortunately I lost the pair I kept for myself in December.

Referring again to the age at which Ducks go to nest, I know that some naturalists will say that one cannot judge by the behaviour of birds in confinement. Against which I maintain that it is quite impossible to tell the age accurately of birds in a wild state. Fitness and consequently the desire to breed seems to be largely a matter of food, and I can hardly believe that a Scaup reared artificially and kept almost entirely on corn—an unnatural diet—will be fitter and more advanced than a wild bird. Especially as it appears very unlikely that a wild Scaup can ever go hungry, seeing that he is a sea-living Duck, at any rate up till the breeding season, and he has only got to dive to find an unlimited supply of small shell-fish, mussels, and other food, besides what he finds on the "muds" at low tide.

I have myself seen immature plumaged wild Wigeon and Shovelers in May and June which were obviously not breeding, but it would be absurd to say that because I have seen these neither Wigeon nor Shovelers breed their first year! and yet when one sees wild, full plumaged Scaup breeding it seems that the authorities assume that these birds *must* be second or third year birds, whereas in all probability a large portion of them are only ten months' old, though I willingly grant that the drakes one sees in patchy "half-plumage" in May do not breed that year.

SHEARWATERS IN CONFINEMENT

In an American scientific journal, there appeared some months ago a rather interesting account of an attempt to keep Shearwaters alive in captivity. It was found that the birds soon became quite

tame, and fed so greedily from the hand that, if allowed as many small fish as they would take, they were apt to die of surfeit. They drank sea water, and if deprived of this, eventually perished of thirst, as they would not touch fresh water once they had tasted it and knew what it was.

Failure to provide sea water to drink may perhaps account for the almost universal failure which people experience in their attempts to keep alive Auks, Petrels, and other purely marine birds which are occasionally picked up exhausted inland in unexpected places. When sea water is unobtainable, Tidman's Sea Salt dissolved in fresh water in the right proportion might be tried. It is unlikely that ordinary salt and water would be beneficial to the birds, as sea salt is, of course, different in its chemical composition from common salt.

T.

HOW TO KEEP INSECTIVOROUS BIRDS IN PERFECT CONDITION

By the late P. F. M. GALLOWAY

(Continued from p. 130)

THE LESSER WHITETHROAT (*Sylvia curruca*)

This species is much smaller than the Common Whitethroat, and it lacks the chestnut brown edges to the wing feathers. It is of a mouse-grey all over the upper parts, the head being of a very clear grey, the throat and breast nearly white, the outside tail feathers partially ashy white, feet leaden grey.

Lesser Whitethroats arrive about the end of the third week in April, or a short time after the Common Whitethroat has made its appearance. The song is a bubbling number of notes more or less mixed up together, but it always ends on a higher note which is somewhat sustained.

The nest is smaller and shallower than that of its bigger brother, and is often built in a hedge, but occasionally down an old lane in brambles. It is built of dead clover or goose grass and the interior is lined with horsehair. There are often two broods in the year. The eggs differ from those of the Common Whitethroat in having a whiter ground colour, and being more or less spotted with grey and umber.

The young are much purer in their colours than the adults, and their white breasts are flushed at the sides with a very pale delicate flesh pink. The adults often bring their young when fully fledged into gardens to feed on the ripe raspberries, of which they appear fond, and many times I have seen the juice of this fruit on the side of their beaks, like a naughty child that has been dipping into the jam-pot and given the game away by leaving some on the sides of his mouth.

The cage for this species should be the same as for the Willow Warbler. Foods also the same, but this bird requires in addition fruit and berries. It will eat elderberries, also red currants.

The Lesser Whitethroat is quite an easy bird to keep, and thrives well in confinement and as a variety is interesting, this being its only recommendation, as its singing powers are not great.

(To be continued.)

AN AFTERNOON AT FOXWARREN PARK

Some forty members of the Society accepted the kind invitation of Mr. and Mrs. Alfred Ezra and spent a most enjoyable afternoon at Foxwarren Park, near Cobham, on Saturday, 16th May. The weather was ideal. Mr. Ezra had most kindly provided a char-a-banc for the party and the drive from Hyde Park Corner was very enjoyable. Foxwarren, so beautifully situated overlooking Wisley Common, with the Surrey Downs and beyond in the distance, was reached about 3 o'clock, and a move was made through the gardens to the aviaries. The situation of these is ideal, between two plantations of larch trees on a sandy soil sheltered from all cold winds and bathed in sunshine. They consist of a row of some nine compartments with warmed wooden shelters opening into wire-netting flights. Beyond these flights are other very large enclosures some 50 feet square planted with shrubs and containing bathing pools and so forth. Each of these large flights communicates with three of the smaller ones, so that the occupants of any one of the aviaries can, by merely opening a door, be allowed access to one of these huge enclosures.

All of the birds were in excellent condition, while many species were nesting. Violet Tanagers had made a beautiful nest in a bush,

while Superb Spreos, Long-tailed Grassfinches, and many others were either sitting on eggs or rearing young. The visitors were especially charmed with three examples of the exquisite long-tailed Royal Starling, a pair of Crowned Wood Partridges, Indian Redstart, Orange-headed Ground Thrushes, Annam Tree Partridges, Cuban Doves, and many other rarities.

The Parrakeet aviaries were next visited, and specially noteworthy were a pair of Alexandrine Parrakeets of which the male is blue and the female yellow. The blue male is perhaps the most wonderful freak amongst Parrakeets that has ever been known. A very perfect pair of Barraband Parrakeets were also much admired.

On returning towards the house a flock of Demoiselle Cranes, accompanied by a solitary Crowned Crane, were met strolling about the lawns and evidently very much at home. After a sumptuous tea had been done full justice to, the visitors inspected the flower-gardens with their ornamental pools and fountains and many rare plants and shrubs; some of the party paid a visit to the farm with its herd of Jerseys, its Llamas and Shetland Ponies, while others were shown a large area of woodland and open heather-covered ground that is being fenced in as a home for such interesting creatures as Emus, Kangaroos, and the smaller Antelopes.

It was after 8 o'clock when the party reached London, all feeling very grateful to their host and hostess for their kindness.

D. S-S.

TWO RARE LOVEBIRDS FROM TANGANYIKA COLONY

Living examples of two very rare species of Lovebirds, never before imported alive to Europe, have recently passed through London *en route* for the U.S.A., and it is as well that a record of this event should be kept.

Mr. Painter, of Cleveland, Ohio, is a very enthusiastic aviculturist as well as a great traveller and big game hunter. He has recently made a trip through East Africa, and on to Cairo via the Nile. At a place called Nagara Nagara in Tanganyika Colony, at an altitude of

some 6,000 feet, he obtained several birds, amongst which were two species of Lovebirds, of which a number were secured. A journey of one thousand miles by motor-car and another two thousand miles by river steamer while confined in travelling-boxes greatly reduced their numbers, and four only of the Lovebirds reached London. I am indebted to Mr. Painter for the privilege of seeing and identifying these.

There were three examples of the Masked Lovebird (*Agapornis personata*), the most characteristic features of which are its blackish-brown face and conspicuous band or collar of yellow surrounding the hind neck and throat. The remainder of the coloration is as follows :—Upper parts, pale olive-brownish ; upper breast, reddish-orange ; back and wings, green ; under parts, paler green ; upper tail-coverts, pale ultramarine-blue ; middle tail-feathers, green, the others orange at the base, green in the middle, then a black band and yellowish tip ; smaller under wing-coverts, green ; the greater ones grey-blue ; iris, brown ; bill, coral-red ; naked skin round the eye and cere, white. Of Fischer's Lovebird (*Agapornis fischeri*) there was but one example. It is something like the Rosy-faced Lovebird, though perhaps more beautiful. The following description is abbreviated from the *British Museum Catalogue* :—Forehead, cheeks, and throat orange-red, darker on the forehead, paler on the throat where it becomes rose-colour ; top of the head, dull olive tinged with reddish on the occiput ; a band of reddish-yellow on the hind neck ; the throat margined with yellowish underneath ; back and wings, green ; the body underneath, pale green ; upper tail-coverts, blue ; central tail-feathers green with the tip pale blue ; outer tail-feathers red at the base, green in the middle, and pale blue at the tip, and with a black band on the inner web before the blue tip ; small under wing-coverts, green, the greater ones grey-blue ; bill, coral-red ; feet, grey ; naked skin round the eyes and cere, white.

Both of these species were described and figured by Dr. Reichenow in 1887 in the *Journal für Ornithologie*, but very few skins exist in any museums.

D. SETH-SMITH.

CORRESPONDENCE

PEREGRINE LAYING EGGS IN CONFINEMENT

SIR,—I should be interested to know if you have noted any records of the Peregrine Falcon having laid eggs in captivity, as I have pleasure in informing you that my specimen has recently laid three eggs for the first time. She must be now about 10 or 12 years old. I have have also a Buzzard that has laid from time to time, but I do not consider this so worthy of record.

H. LOVIBOND.

[The Editor hears that the bird has since laid five more eggs. He believes that there are other records of the Peregrine laying in captivity. Can anyone supply details ?]

DRINKING HABITS OF THE PAINTED FINCH

SIR,—How does the Painted Finch (*Emblema pieta*) drink ?

The late Dr. Russ pointed out that the Diamond Finch, a near relative of the Painted Finch, unlike most other Finches, does not tilt its head backwards in order to swallow each mouthful of water, but sucks up the liquid after the manner of a Dove.

In my *Foreign Finches in Captivity* I confirmed this statement, and added that I had seen the Green Amaduvade do the same thing.

Has any member of our Society who has kept the Painted Finch noticed whether it also drinks in this fashion ?

ARTHUR G. BUTLER.

A TALKING BUDGERIGAR

It is well known that a Budgerigar, if kept by itself with only human companions, soon becomes tame and makes a very charming pet, while such birds will occasionally learn to articulate words and even sentences quite plainly. The following letter on this subject, which was sent to the Zoological Society, will interest our members.

SIR,—I believe the following lines will interest you. I have a Green cock Budgerigar which I have had for two years last Christmas. When I first had him he was very wild indeed, so, after a few months, I bought him a mate but she only lived about three months. Now

I have been told that they must be kept in pairs, but this one has been much happier since being alone. Now comes the interesting part. I have a boot shop and this bird is in with us : his cage has always been left open, so the only time he spends in it is night-time. One day about eighteen months ago I held a glass of beer to him. He took some and now looks for it everyday ; since he has had just those few drops everyday he has never had a minute's illness and his plumage is always in good condition. I have read in books that it is possible to teach these birds to talk if taken from the nest early. Well, this one talks as plain as any human being, and he was adult when obtained. We have always called him by the name "Joey", so you can guess we were surprised to hear him say "Joey" about eighteen months ago. Since then he has picked up quite a lot of words. We have not spent hours teaching him words as one does a Parrot, but have just spoken to him as one would to a child, and he has learnt that way. The following are some of the sentences he says quite plainly :—"Joey loves his master" ; "Where's Joey's Beer" ; "He's just bit his master" ; "Is Joe a pretty boy ? Yes, course he is" ; "I'll kill you, you little devil" ; "Mabel (my wife's name) come here, I want you" ; "Poor Joey's tired" ; "Kiss Joe" ; "Joey Cole, Earl's Court." That's just a few, so as you can see he can pronounce practically every letter. He is now beginning to understand, when we ask him anything, to know what to answer us. Now, as regards food, he eats and drinks anything, always sits by my saucer when I have my first cup of tea and waits for me to give him some ; the same thing at breakfast time. At midday, if I forget to give him anything, he shouts out "*Where's Joe's Beer ?*" and he always helps himself to a little. He won't eat fruit, except oranges, which he is very fond of, also flowering grass.

SIDNEY G. COLE.

CUCKOO MOBBED BY STARLINGS

SIR,—On 9th May, about midday, a considerable disturbance occurred close to where I was standing in the garden, and on investigating it, I found some Starlings, eight or nine in number,

in the air were mobbing a bird which, when it separated from them, showed as an adult Cuckoo.

Two Starlings have a nest with young close to where the disturbance occurred; and possibly this pair mistook the Cuckoo for a Hawk and therefore started to attack it, the others joining them.

FREDERICK D. WELCH.

[Starlings, as well as many other birds, habitually mob Cuckoos.
—ED.]

VELVET SCOTER INLAND

SIR,—About two weeks ago a Scoter Duck came on to one of the ponds here, Red Nab, Heysham. I could not get near to see just what it was, but could see it was not a common Scoter. Yesterday we found it dead, and it was a Velvet Scoter Drake (*Edemia fusca*), I think a rare bird to find on our coast.

JOHN W. MARSDEN, F.Z.S.

REVIEWS

We have received from Messrs. Longmans, Green & Co. the first copy (price 16s.) of a new four-volume book on British Birds by Archibald Thorburn. Twenty years ago a well-illustrated book on British Birds, portable and reasonable in price, was a thing unknown. Recently, however, more than one quite useful book of this kind has made its appearance, but there is little doubt that Mr. Thorburn's work, when complete, will prove decidedly the best. The first volume deals with the smaller perching birds—Finches, Warblers, Tits, Wagtails, etc. The letterpress is thoroughly up to date, and no rare straggler on the British list is omitted, nor any subspecies that energetic "splitters" have been able to differentiate from the type. The numerous coloured plates are, it is almost needless to say, beautiful, and many rare birds are figured as well as all that are well known. A severe critic might consider the figure of the Hawfinch and cock Chaffinch as not entirely satisfactory, but most of the plates reveal that absolute perfection which we are accustomed to associate with all Mr. Thorburn's work.

T.

THE REV. C. D. FARRAR'S REMINISCENCES

The older members of the Avicultural Society will remember the many very interesting articles, often flavoured with a strong taste of genuine Yorkshire humour, that appeared in the Magazine in the "good old days" some time before the War, from the pen of the Rev. C. D. Farrar. We used to much enjoy those articles, although the successes in breeding rare birds therein described often made some of us green with envy; and the Magazine, for several years past, has been the poorer for their absence. We are very glad to hear that Mr. Farrar still occupies the Vicarage of Mickelfield, though whether the famous aviaries are now tenanted we do not know, but at any rate from the Vicarage has emerged a very entertaining as well as instructive book recording the many successes with rare birds, that have been achieved there. We are not sure when it was published but a copy has been sent to us and its perusal has given us very much pleasure; we are quite sure that our members will thank us for bringing it to their notice. It is called *Through a Bird-Room Window*, and is published at 6s. net by F. V. White & Co., Ltd., 17 Buckingham Street, Strand, W.C.

D. SETH-SMITH.

THE ANNUAL MEETING AND GARDEN PARTY

This will be held, as before, in the Zoological Gardens on Saturday, 18th July. Tea, to which all Members are cordially invited, will be served in the Fellows' Pavilion at 4 p.m.

ERRATA

On page 102, line 16 from the top, for *FLAVOFALLIATUS* read *FLAVOPALLIATUS*.

In letter on p. 135 about Geese it should have read "South American Upland Geese" (they occurring in Patagonia, etc., as stated previously by me in 1924 volume, pp. 86, 87), not "African" as printed in lines 3 and 10.

F. D. WELCH.

14th May.

THE EDITORSHIP OF THE MAGAZINE

The Council and members of the Avicultural Society are much indebted to the Marquess of Tavistock for having edited the Magazine during the past eighteen months. Lord Tavistock now finds that with his time greatly occupied in philanthropic work he cannot devote the necessary leisure to the AVICULTURAL MAGAZINE and has reluctantly decided that he must resign the post of Editor. The Committee have therefore prevailed upon Mr. Seth-Smith to undertake the editorship once more, commencing with the present number.

Mr. Seth-Smith is a very busy man, and he hopes that members will give him every assistance in their power by supplying "copy". There are many members who keep birds, some extensively, who never record the many interesting events that happen in their aviaries, and we appeal to these for notes on any subject that would be likely to interest our members.

Some of our members are very generously defraying the cost of some of the coloured plates; Mr. Astley, Mr. Ezra, M. Delacour, Miss Crosse, and Captain Stokes have each either given or promised one, and it has been suggested that other members might be willing to do likewise. The cost of good coloured plates varies according to the number of different colours in the subject, but from £20 to £25 for the drawing and reproduction of a coloured plate is about the figure.

Members need hardly be reminded that more members are urgently needed, and we would ask every member to try and obtain one or more new members.

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THE AVICULTURAL MAGAZINE

BEING THE JOURNAL OF
THE AVICULTURAL SOCIETY
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FOREIGN & BRITISH BIRDS
IN FREEDOM & CAPTIVITY

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JULY, 1925.

PITTAS, CHATTERERS, TYRANTS, ETC.

By J. DELACOUR

Several of these families are somewhat uninteresting from the avicultural point of view, as they are so seldom imported alive ; others, however, include many strange and magnificent birds, such as Pittas, Chatterers, Manakins, and Broadbills, and the wonderful Australian Lyre-bird is amongst them.

I have been able to make observations on a good many of these birds, as much on captive birds I have kept as on wild birds in their American or Asiatic haunts.

A. The Pittas

The Pittas form a compact family, somewhat resembling the Thrushes, with long thin legs and very short tails. Almost all of them have very bright colours ; sometimes the sexes resemble one another, sometimes they are different.

Pittas are insectivorous and live on the ground or in low bushes ; they are very difficult to see, and build covered nests on the ground. They are migratory, but few go beyond tropical countries. They are found in India, Indo-China, China, and Japan, most of the East Indian and South Sea Islands, Australia, and one species only occurs in Africa.

In captivity Pittas need the same food as other insectivorous birds ; they are difficult to feed, but their weak point is their feet,

which are inclined to get sore, and they often die of it ; it is therefore necessary to give them soft, clean, and slightly damp ground, made of dead leaves or other soft material, and to watch the state of their feet. They stay all day on the ground, or on a log or stone which should be provided ; they roost only for the night.

The Blue-winged Pitta (*Pitta cyanoptera*) has seldom been imported. It is a fine bird, the size of a Missel Thrush, which inhabits Indo-China, South China, and Borneo. I met with it in Annam, and Dr. Cogneveq, Governor of Cochinchina, keeps in an aviary at Saïgon a very good specimen, which he feeds mostly on earthworms. Head, brown with black sides and white throat ; upper part, green ; wings and tail, silky blue ; chest and flanks, buff ; belly and under tail-coverts, crimson.

The Bengal Pitta (*Pitta brachyura*) from India is the commonest species in captivity. It resembles the above, but is smaller and less bright ; it also differs in having a black band on the crown and occiput, and less crimson underneath.

The Noisy Pitta (*Pitta strepitans*) from Australia and New Guinea is imported at intervals. It differs from the above mostly in having the sides of the head and neck, nape, throat, and upper back black.

Pitta novæ-hiberniæ has once been imported.

The Hooded Pitta (*Pitta cucullatus*) comes sometimes from the Himalayas, Burma, Annam, or the Malay Peninsula. It is a bright green bird, with blue shoulders and tail, with a chestnut hood on the head, surrounded by black on the throat and sides of the head ; under tail-coverts crimson.

The Rainbow Pitta (*Pitta iris*) from North Australia is rather similar, but has the head, breast, and under parts entirely black, save for a chestnut crescent on the nape. It has lived in the London Zoo.

The Blue-tailed Pitta (*Eucichla cyanura*) from Java has been imported in 1919, and was the property of Mr. H. Astley ; it differs from the above species in having a longer tail, although this is still very short. The head is black above and on the cheeks, with pale yellow eyebrows and throat ; a black and blue band across the chest ; under parts with dark blue and yellow stripes ; back, reddish-brown ; wings, black and white ; tail, blue.

B. The Chatterers

Chatterers include birds varying from the size of a Goldfinch to that of a Raven. They vary a good deal in aspect as well as size, but most of them have a rather short bill and large gape, short wings and tails. They are almost entirely frugivorous, although taking insects as well. They all inhabit Central and South America, living in the tropical jungle, always in the trees, and often on the tree-tops; they are rather timid and avoid human presence. Some of them, such as the Cock-of-the-rock and the Blue Chatterers, are amongst the most beautiful birds in the world. Their voice is generally very strange and powerful, and while staying in Guiana I often heard the astounding calls of the *Lathria* and Bell-birds; no other bird's voice can give an idea of their strength; they can be heard two or three miles away; others, such as the *Calvifrons*, imitate the bellow of a bull or, like the *Atila*, never cease to utter a monotonous enervating song. Chatterers are difficult to accustom to captivity and, with the exception of Bell-birds, arrive in Europe on exceptional occasions only. They should be kept in large cages or indoor aviaries at least from October to May, and be given plenty of fruit, grapes especially, insectile mixture, raisins and dry figs, boiled rice and potatoes, etc. They are very quiet and rather dull, but the lovely plumage of some of them and the extraordinary voice of others make them very desirable cage birds.

The Cock-of-the-rock (*Rupicola rupicola*) is a wonderful bird of a big size, with a short tail, the colour of which is brilliant orange red save for the brown wings and tail; a big crest on the head, curved towards the beak. It is found on the rocky banks of streams in inaccessible parts of Venezuela, Guiana, and Amazonia. Other species inhabit Peru, Ecuador, and Colombia. This bird vanishes as settlement encroaches. A few specimens have been kept in captivity in Mr. Pauvel's collection in Belgium and in the London and New York Zoological Gardens. They are delicate and need good fruit, especially grapes *ad lib.*

The typical Chatterers belong to the genus *Cotinga*, and are among the most magnificent birds that exist: of the size of a Thrush, they are of a bright blue, metallic and silky above; wings and tail, black;

according to species, the under parts have more or less extensive reddish violet marks. The Banded Chatterer (*C. cincta*) from South-Eastern Brazil, and the Blue Chatterer (*C. cayana*) from Guiana and Amazonia, have been imported ; they do well on the ordinary Tanagers' food.

The Pompadour Chatterer (*Xipholena punicea*) from Guiana has been brought to New York by Mr. W. Beebe ; it is a near relation to the above genus ; it has a curious white and wine-coloured dress.

Pyroderus scutatus, a bird the size of a Crow, black with red throat and foreneck, has been imported from Brazil.

The Umbrella-bird (*Cephalopterus ornatus*) is another large bird, all black, with curious crest in shape of an umbrella over the beak, and a large feathered wattle hanging from the neck. It has once been imported to England. It is found in many parts of tropical America, but is scarce everywhere.

The Bell-birds (*Chasmorhynchus*) are oftener imported than any other Chatterers ; the size of a big Thrush, they live well in confinement on fruit and insectivorous and other mixtures. All the four species have reached Europe.

The Naked-throated Bell-bird (*C. nudicollis*) is sometimes on dealers' price-lists, and comes from Brazil. The male is all white, with a pale green naked throat ; the female, greenish-brown.

The Snowy Bell-bird (*C. neivus*) from Guiana resembles the preceding species, but possesses a long, curved, and thin wattle above the bill.

The Pied Bell-bird (*C. variegatus*) from Trinidad, Venezuela, and Guiana differs from the above in having a brown head and black wings ; its naked throat is covered with small caruncles.

The Costa Rica Bell-bird (*C. tricarunculatus*) is the strangest of all ; it is a brown chestnut bird, with white head and breast ; three long and narrow caruncles, in shape of spines, rise from the front and under the eyes.

Bell-birds are remarkable in uttering a resounding call, which reminds one of the noise of a hammer striking an anvil ; they call in captivity.

We shall only mention the Manakins (*Pipridæ*), small tropical American birds related to the Chatterers and having most of their

habits. They are commonly found in the low parts of the jungle ; they generally have small bills and short tails, sometimes with pointed feathers ; their colour is often very bright, being black with yellow, red, or blue zones. I often watched several species in Venezuela and Guiana. One only of the many I captured lived for several weeks on fruit (*Manacus manacus*).

We read in avicultural papers that Manakins have not been uncommon in French aviaries in the old days, especially *Pipra aureola*, *Chiroxiphia pareola*, and *C. caudata*, but since I have been keeping birds I have never heard of any being kept in Europe.

C. The Tyrants

The Tyrants are very commonly and widely distributed all over America, but they are much more numerous in tropical parts. They vary in size from that of a Wren to that of a Shrike or Thrush ; many resemble closely the Flycatchers, of which most of them have the habits and diet, and are called by their name in America ; others look rather like Thrushes or Wagtails, or even Larks. Many Tyrants are very tame and inhabit gardens, villages, and even towns, roosting on telegraph wires and roofs ; they are well known to all who have crossed over the Atlantic, as they are very noisy and cannot escape notice, even from the most casual visitor. All are insectivorous, and are seen all the time catching their prey. They are most pugnacious and plucky, and drive away even much stronger birds. Tyrants vary greatly in aspect, according to their size and terrestrial or arboreal habits ; their bills are either short and small or long and broad, but always rather flattened, with a strong hook and long bristles. Many are plain grey or brown, and therefore not very attractive ; numerous species, however, have almost the same dress, which is not without elegance ; back, wings, and tail, brown or grey ; under parts, yellow ; throat, white ; head, dark brown or grey, with white eyebrows and a red or yellow band on the top of the head ; the latter forms a sort of crest, which is nearly always hidden when the bird is not in action. But two groups of Tyrants are of exceptional beauty : the Vermilion Flycatchers (*Pyrocephalus*), whose heads and under parts are bright scarlet in the male, and the Royal Flycatchers (*Onychorhynchus*),

which has over the forehead a wonderful fanlike crest, red or yellow, with a metallic blue border. But, so far, none of these lovely birds have reached us alive.

Tyrants are little appreciated as cage or aviary birds owing to their unattractive plumage and shape, and their voice is often disagreeable; the name of "Keskedee", which comes from the French "Qu'est-ce qu'il dit", under which several species are known in their haunts, gives a good idea of their call, which they utter unceasingly and to a rather tiresome and sharp tune.

A dozen species have been imported and they do well on the ordinary diet for insectivorous birds, but my own experience is that it is not so easy to get them on artificial food when they have been caught up.

Tænioptera nengeta has been brought from Brazil; it is a Wagtail-like bird, ashy-grey with black and white markings.

Machetornis rixosa, which is found from Venezuela to La Plata, resemble the above species, but the ordinary colouring of many Tyrants, brown above, yellow underneath, with the red band on the crown.

The *Elainea* look like Flycatchers. I brought one from Martinique, *E. martinica*, ashy grey, but of very pretty shape; it had a pretty song and was quite tame.

The Phœbe (*Sayornis phæbe*) is a popular bird in the United States, and also resembles a Flycatcher.

The Keskedees (*Pitangus*) are the most frequently imported Tyrants; very common in the gardens and streets of towns in Central and South America, they are extremely noisy; they are all brown above, yellow below, with white throat and eyebrows, black head and orange red crest; their bills are long and strong. *P. sulphuratus* from Argentine, *P. rufipennis* from Central America, *P. lictor* from Venezuela, Colombia, etc., and *Megarhynchus pitanga*, which differs from the above by its larger bill, is found all over South America, and is offered from time to time and does well in aviaries.

The true Tyrants (*Tyrannus*) have longer wings, but weaker and shorter bills and feet.

The King-bird (*T. tyrannus*) from North America is dark grey above, light grey underneath, with a red crest. They are very pugnacious.

The Southern King-bird (*T. melancholicus*) is greyish-brown above, with a grey head and red crest, pale yellow underneath ; throat and cheeks white. Both species are very tame and like gardens, where they are seen all day catching insects in a Flycatcher's way. They have sometimes been brought to Europe.

A very pretty Tyrant (*Muscivora tyrannus*) has been shown in the London Zoo ; I have seen hundreds of them in the interior of Venezuela. It is a lovely grey bird, white underneath, black head, and yellow crest ; but its beauty lies in its long, forked, black tail, which reminds one of that of a Whydah.

D. The Oven-birds and Woodhewers

The Oven-birds are other American birds especially numerous in the South. They are rather small, rufous red or brown ; some are terrestrial, others arborial, and even living on the trunks of trees, reminding either of Stonechats, Titmice, Tree-creepers, or Larks ; their bill is generally long and weak, sometimes curved. All are insectivorous. The most striking feature in these birds is the nest of many species, built of clay and mud in the shape of an oven. The only species which is sometimes imported is the Rufous Oven-bird (*Furnarius rufus*), brown above, whitish below, with white throat and belly ; it inhabits Argentine and does well in captivity on the ordinary diet for insectivorous birds.

The Woodhewers (*Dendrocolaptidæ*) form a closely related family inhabiting the same parts ; they are larger birds, mostly brown and resembling large Tree-creepers in habits, but, like Woodpeckers, they tap the trees ; their bill is often very long and curved. None have ever been kept in captivity ; they would be difficult and unattractive.

E. The Ant-birds

The Ant-birds (*Formicariidæ*) form a large family of birds found in Tropical America, like the preceding ones, including over 400 species ; but on account of their insectivorous habits and dull plumage it is very seldom that any of them are brought to us, and they remain little known to aviculturists. They vary from the size of a Wren to that of a

Jay ; many resemble Thrushes, Dippers, and Pittas ; they feed on insects. I have often watched some species following an army of ants through the South American jungle and catching the unfortunate insects which had escaped their voracious enemies. Many Ant-birds live on the ground or close to it.

Most Ant-birds have a brown dress, but many are prettily streaked or marked with white, black, or rufous red ; others are long, their tail and wings short. Only two species, we think, have been imported alive : *Grallaria varia*, from Amazonia and Guiana, a big ground bird reminding one somewhat of a Pitta ; olive-brown above, with grey nape, feathers of the head edged with black, throat and chest chocolate-brown, surrounded by white and pale rufous under parts ; and *G. brevicauda*, from South-Eastern Brazil, resembling the above, but with a less short tail, olive-brown above, buff with black stripes underneath, with a ruddy head and white spots near the eye. In confinement they need the same care and food as Pittas.

F. The Lyre-bird

This is the place to speak of this wonderful Australian bird which, although being decidedly of the Passerine order, resembles a gallinaceous bird by its size, aspect, and habits. It is terrestrial, scratching among the dead leaves to find its food. Among all its interesting points, on which I cannot insist here, I shall only mention the wonderful lyre-shaped tail which is spread when the bird is displaying, and the extraordinary voice which enables its owner to imitate all noises, songs, and whistles.

Unfortunately, this splendid bird has been on the verge of extinction ; very strict steps have been taken to protect it, and we hope they will be efficient. In the past it has been sometimes shown in European Zoos, in London and in Paris especially, where it used to live well. Nowadays it is far too rare in Australia to be allowed to be trapped and sent over to Europe.

G. The Broadbills

To close this chapter we shall only mention a small family of birds, almost restricted to a dozen species, all remarkable by their strange

shape and lovely feathers: they are the Broadbills (*Eurylæmidæ*), and are found in the tropical parts of Asia and the Malay Archipelago. They are arboreal, living in damp forests, their purse-shaped nests hanging from branches. Some are rather small, green, or ruby-grey (*Psarismus*, *Serilophus*, *Calyptomena*); others are larger, black variegated with white, yellow, red, etc. (*Eurylæma*, *Corydon*, *Cymborhynchus*). I have often admired them in their tropical haunts, and always dreamt of bringing some alive. Until now none have ever come, but I suppose they could live in confinement on a proper diet of fruit and insects.

THE BLUE-WINGED GOOSE OF ABYSSINIA (*CYANOCHEN CYANOPTERA*)

By F. E. BLAAUW, F.M.Z.S.

About two years ago I heard of the probable importation of Blue-winged Geese from Abyssinia, and at once took measures to get my share should the importation be successful. Blue-winged Geese have, as far as I know, only been imported alive to Europe once before. This was to Schönbrunn, for the zoological collection of the Emperor of Austria just before the war, and they did not survive long.

When, in December, 1923, I got my lot of seven Blue-winged Geese, I was never more disappointed, after great expectations, than I was at the sight of the birds that walked out of their packing-cases.

They were in very bad plumage and general condition, and were walking with their breasts carried forward and their heads resting amongst the ruffled feathers of their backs. Besides, they were all continually pecking at each other.

I put them in a warm bird-house and separated the greatest fighters amongst the lot without being able, however, to produce friendship or even peace amongst those that remained together. I fed them on all sorts of grain, bread, greenstuff, and even chopped raw meat and after months of the greatest care I apparently had saved the lives of six of them, one surplus male having died.

Those six were three males and three females, and I daily expected

to see some improvement in the way they carried themselves, but in this I was totally disappointed.

They were either sitting in a lump together, occasionally pecking at each other, or they would walk about with their breasts carried forward and their heads on their backs. Only on rare occasions they would get excited and lift heads and necks and carry themselves like ordinary Geese.

The males have a very melodious whistle and the females a soft and much lower note, and these can be distinguished from the males by their smaller size. I kept the birds in the bird-house until last spring, when I put them in an enclosure with a shed within it so that they might be taken in at night during the first few weeks. Then, as the warm weather came, which unfortunately was only with us during a short time last summer, the birds began to moult, flight-feathers and all, and are now in superb plumage. The moult and good condition did not, however, change the way they carried themselves.

One day I had a surprise. I happened to pass their enclosure when it was nearly dark, and there I saw my Geese quite active—grazing, carrying neck and head in an erect position, whistling to each other, and in short doing everything that is expected of healthy Geese. I thought I had, and still think I have now, the explanation of it all, as I have since seen this thing over and over again.

This species of Goose, I have no doubt, is nocturnal, and only active, therefore, during the night.

This, however, does not explain the very peculiar way these birds have of carrying their heads and necks during the day-time. The head not only rests on the back, but all the large wing-coverts which surround the spot where the head lies are ruffled, and as they are curved and more or less lengthened this makes them look all the more peculiar. Although looking so huddled up, these birds are extremely agile if there is need for it, as I experienced once when we had to catch them to bring them to another enclosure. I know of no other species of Goose that walks about in this position, and, if remarkable, it certainly is not ornamental.

In other respects this Goose resembles in shape members of the genus *Bernicla* or *Chloephaga*. The head is small and the bill com-

paratively quite as small and about the same shape as that of the Upland Goose and the size is about that of the Ashy-headed Goose. The shoulder feathers, which are white in members of the *Chloephaga* group, are of a delicate pale blue in our birds, and there is also a shining green mirror on the wings.

The general plumage is of a soft greyish-brown, with brighter coloured tips at the end of the lengthened wing-coverts of the back mentioned before.

There are light spots on the flanks, and the breast is also lighter. Legs and feet and the bill are black. The birds might be attractive if they were active during day-time. As they are they are certainly interesting, but they are of the class which old Mr. Albert Jamrach would no doubt have called *scientific* birds, this being his appellation for birds which he could only sell on their claim of being either rare or peculiar but not attractive.

HAND-REARING A YOUNG CARIAMA

Dr. O. Heinroth of the Berlin Zoological Gardens is not only a very experienced ornithologist but a most skilful aviculturist. With the help of Frau Heinroth he has reared a number of delicate young birds in his house, and he has had Nightjars nesting on the hearthrug in his dining-room!

In the *Journal für Ornithologie* for 1924 he gives a most interesting account of the hand-rearing of a young *Cariama cristata*, of which we append a translation of a part:—

“In the *Proceedings of the Zoological Society of London*, September, 1912, D. Seth-Smith published a communication on the subject of the breeding and rearing of a *Cariama* by its parents in the Zoological Gardens in London. Since, however, this account was very short, my wife and I were delighted to have the opportunity of rearing a *Cariama* in one of our rooms, the pair in the Zoological Gardens in Berlin having had a second brood after losing the first. After an incubation of twenty-five days, during the evening of 12th June, 1914, a young bird came out in the incubator, the egg having been entrusted to a common hen till the last moment. When newly hatched

the *Cariama* weighed 42 gr., its eyes were open, it lay still, but soon raised its head and snatched at pieces of food which were offered to it. At the same time it made a soft cheeping and, on taking hold of the food, a hoarse rattling noise. Its beak was black, pink at the roots; its feet were also pink, the middle claw white and the others dark; the iris was grey. We could not detect any incipient quill-feathers. At a superficial glance the down resembled that of the Night Heron (*Nycticorax*), at the same age, and also reminded us slightly of a newly hatched Kite (*Milvus*). For the most part the down was brownish yellow with light and dark shadings. On the second or third day we noticed that the bird was not thriving; it ate little and, as evacuation seldom took place, the crop gradually became enormously distended.

“On 16th June, at the age of four days, it died, and the gizzard was found to be full of undigested food. The skin of this bird, a female, was sent to the Zoological Museum in Berlin.

“On 18th July, 1914, another young *Cariama* was hatched after twenty-six days' incubation. The egg had first been placed under a hen and then given to a duck to hatch. The young bird weighed 45 gr. In contrast to its sister it had the navel well retracted and it thrived well; the rest of my observations refer to this bird. At the beginning it always had one or two pieces of crushed meal-worms, fresh ants'-eggs, a few cockroaches, spiders, and the like; later it had in addition raw heart with yolk of egg, pieces of lizard, mice, etc. At first it lived in a Blackbird's nest, later in a nest made of a flat basket and, during the first few days, artificially heated. In evacuation the bird slid backwards, an instinctive action designed, of course, to keep it clean. Probably the parent-birds then remove the droppings. Of course it had no idea of the purpose of its action for, unless we took care, it often immediately lay down upon its own droppings.

“This specimen, like the first, showed a falling-off in appetite and well-being on the fourth day. It began to peck at the *pupæ* of ants, only to throw them away again. This suggested to us the idea of offering it little stones and sand. Both were greedily swallowed and put an end to the trouble. A close inspection of the nest which the parent-birds had built on a shelf put there for that purpose showed that

there were sand and earth at the bottom. So it is possible that in a state of freedom the young bird is in this way enabled from the beginning to assimilate indigestible matter such as I have mentioned. Young Herons do not eat these things.

“On the sixth day the eyes, which had increased in size, took on a yellow tinge and the first quills appeared on the shoulders and the wings, as well as amongst the down. As a rule, the bird sat upright, resting on its hind claws, but it could not as yet stand. When it was a week old we heard the first high, loud screeching notes, with which we are familiar in the full grown birds. Moreover, it succeeded in its earliest attempts at standing, supporting itself at first with its beak. In sunshine and warmth the little fellow was very cheerful, hopped about, flapped its wings and began to preen itself, but could not as yet reach the vent, nor did it attempt to scratch. At ten days' old it could stand well. For some time it had had the habit of picking up anything thrown to it. The wing-feathers now emerged from their sheaths.

“At twelve days old, on 30th July, our fosterling danced about, flapping its wings and giving the true cry of the Cariamā. At this time it began to jump out of the nest, so that as a rule it spent its time running about outside.¹ About six o'clock in the evening it used to become restless and tried to get on to high objects. It gradually began to take sand-baths. (The Cariamā never bathes in water.)

“At three weeks old the first down was shed, to the weight of 6 or 7 gr. At this age the Cariamā ate in a single day a bird as large as a House-sparrow cut up in pieces, four lizards, some cockroaches, 15 gr. of fish and a piece of heart, putting on 20 gr. in weight. Every evening, after having betaken itself about five o'clock to a high perch for the night, it was put back in its basket, and at once settled down to sleep.

“At four weeks old it sprang on to chairs and liked to go to sleep on our shoulders. At such times it drew in its head but did not put it under the feathers on its shoulders. When climbing it made use both

¹ The London specimen did not leave the nest till it was a month old. The photograph showed that, at a later date, its legs were rather crooked, so I think it possible that they were weak.

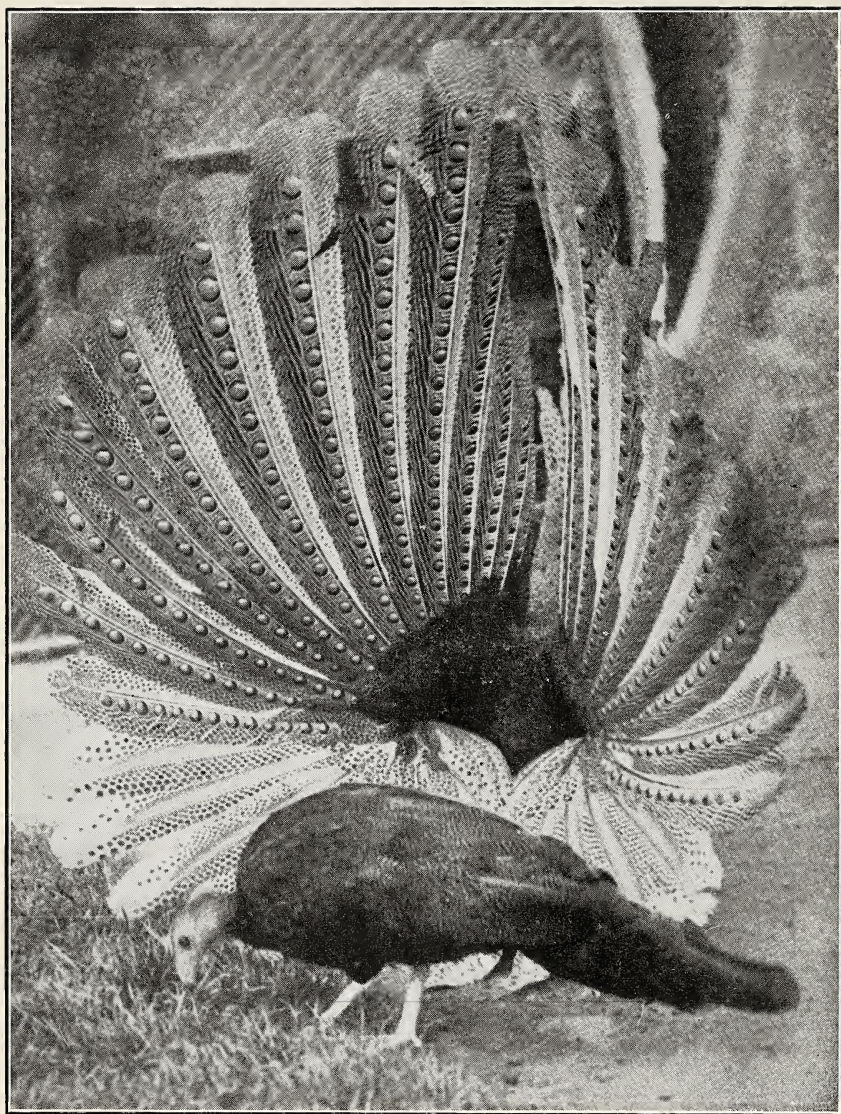
of its very sharp claws and of its beak. From this time on we took it for a walk in the open air every morning, and it ran everywhere after us, as though taking us for its parents. When it approached the Cranes it answered their chattering with its own cry, but it was afraid of its parents, uttered a note of alarm, and ran away. The parent birds, however, took almost no notice of their offspring. It took about 90 gr. of food daily and gained 27 gr. in weight.

“At forty-three days old, on the 31st of August, it could spring on to a shelf 90 cm. high. Some time previously the moulting of the small feathers had set in; the new feathers were darker than the old. This new plumage was not merely a substitute for the old feathers but the new feathers sprouted between them in the manner with which we are familiar in other birds.

“When it was seven weeks old I was taking it for a walk one evening near some high oaks when suddenly I lost sight of it. After a long hunt I saw it on a large bough 5 m. high. It was nestling against the trunk, having settled down to sleep. It had succeeded in climbing up the rough and perfectly perpendicular tree trunk, for at this period it could not fly. At this age its favourite food was first mice, then lizards, then fish; it would also eat grapes.

“At eight weeks old the bird could fly a distance of some metres and to a height of 1 metre; it could spring straight on to a table and from there to a cupboard. When live snakes were put before it it was terrified; it hissed and retreated, but at a distance it made with its beak the motion of throwing, with which it was wont to kill live lizards by dashing them on the ground.

“When two months old the bird flew about 10 m. at a height of 1 m. and was good at climbing trees. Its beak was black and its feet red-brown in parts. Its mental capacities were small; in particular we did not think that it could distinguish us from other people, for it would follow anybody. We noticed the same fact in a Crested Quail and a young Bustard. Often the most harmless things aroused its mistrust. Once when an airship flew overhead the bird cowered down in some bushes. It killed mice and the like without ado and used the claw of its inner toe to help in tearing them to pieces. Once some half-fledged birds hopped from a Finch's nest and fluttered on



D. Seth-Smith.

Display of the Argus Pheasant.

FIG. 1.—Front view.

to the ground, thereupon the *Cariama* seized and killed one of them with the speed of lightning before we could prevent it. It was very fond of sand-baths and would lie comfortably, often with its wings spread, in the sunshine. At six months old the moulting of the small feathers had practically ceased. The bird spent the winter in a large covered space, and in June of the following year was placed in an outside cage in the Zoological Gardens and during the summer was sold and sent to New York.

“The general impression which I received of the movement and behaviour of the young *Cariama* is that it does not resemble those groups of birds with which it is generally classed: young Cranes, Bustards, and Birds of Prey behave quite differently. Unfortunately, I am not acquainted with the development of the Sun Bittern, the Trumpeter, and the Kagu. The most striking feature of the *Cariama* is that it is not pre-eminently a bird which remains in the nest, nor does it show a marked tendency to leave it. The young bird sits in the nest for a short time but soon leaves it, although not fully fledged. Possibly, as I hinted earlier, this behaviour is due to a primitive instinct of its kind.”

THE ARGUS PHEASANT AND ITS DISPLAY

By D. SETH-SMITH, F.Z.S.

The nuptial display of the male bird to its mate as the nesting season approaches is one of the most beautiful spectacles in nature, especially when nature has provided special highly ornamental plumes for this purpose. In nearly all species of birds some degree of display by the male takes place, although in a few species it is the female that does the courting and who is specially decorated for the purpose, such cases, however, being few in number. The Birds of Paradise and the Pheasants may be cited as outstanding examples of excessive development of the plumage of the males in order to enable them to perform a startling effect before their consorts. This special development of the plumage takes very varied forms, such as lengthened plumes of special texture and often brilliant colours, growing from the flanks, chest, nape, head, tail, or wings, and the

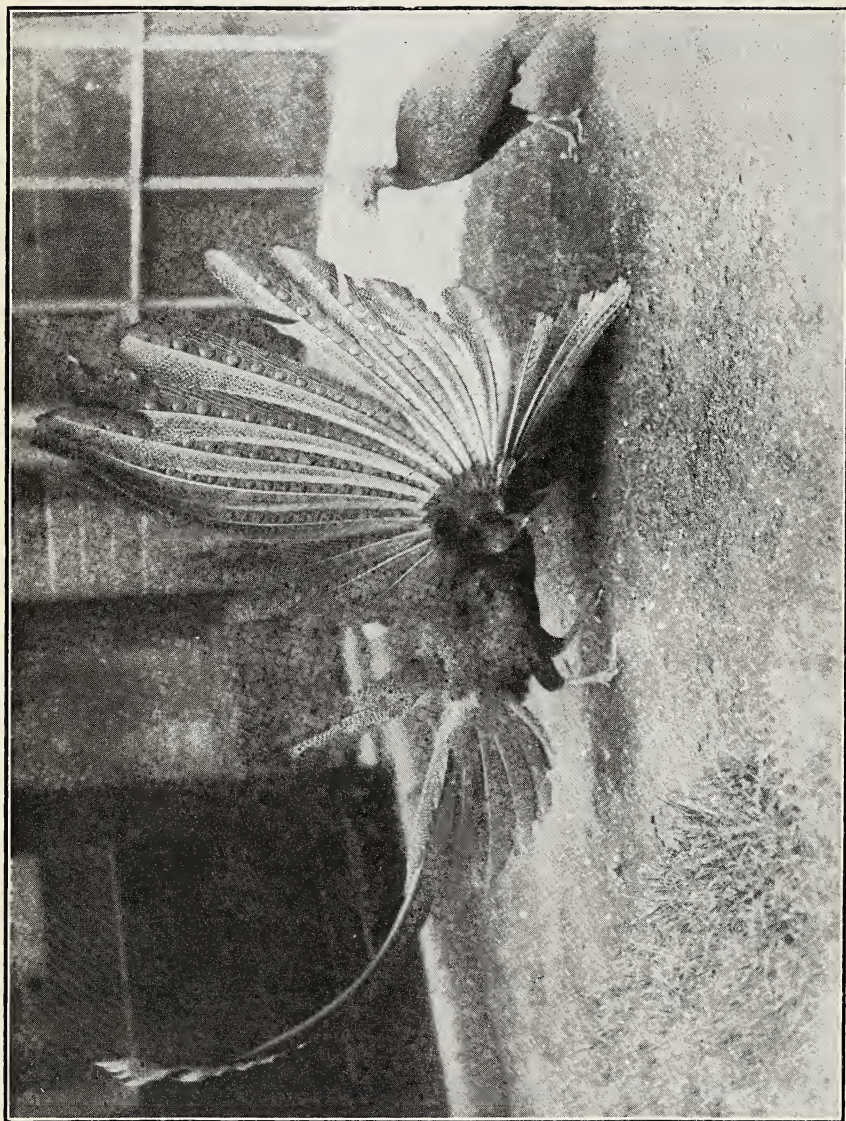
method of display is designed so as to bring these ornamentations into special prominence.

That the display is of the utmost importance to the existence of a species is evident from the fact that such over-development of the plumage is provided for the purpose of the nuptial display and this alone, for at all times other than during the display the excessive development of wings, tail or flank-feathers is an actual incumbrance to the bird, rendering flight and concealment far more difficult for the males than for their unencumbered mates. With polygamous birds the fact that the males are less well protected from the natural enemies of the species than are the females is of no detriment to the species as a whole, since the female is the most valuable sex and must be more carefully protected; and so we generally find her protectively coloured and with no hindrance to her rapid flight from danger. The extravagant ornamentation of the male is therefore simply and solely to enable him to perform a brilliant display to the opposite sex, often at the expense of his own safety.

In the Pheasants there are several species in which the males are specially decorated for the purpose of the display, but perhaps the two outstanding examples of this are the Peacock and the Argus Pheasant, the former with the upper tail-coverts enormously produced and decorated, and the latter with the secondary wing-feathers extended to twice the length of the primaries, of great width and elaborately decorated. The method of display of the Peacock is too well known to need further reference, but that of the Argus Pheasant is rarely witnessed and some notes thereon may not be out of place.

When in its normal attitude with wings closed the Argus Pheasant gives the impression of a plain brown bird with a very long tail, a close inspection showing that the plumage is minutely spotted and vermiculated with buff or cream-colour. The head is bare of feathers except for a tuft of short black feathers on the crown and some hair-like feathers, grey in colour, along the nape, the skin of the head being blue. The bird is well camouflaged, except when it opens its wings.

The great beauty of the Argus Pheasant lies in the wing feathers, both primaries and secondaries. The secondaries are of great length and breadth, and are decorated throughout their length with a series



D. Seth-Smith.

Display of the Argus Pheasant.

FIG. 2.—Note position of head.

of large spots or ocelli, drawn with mathematical precision and shaded, as by a skilled artist, so as to represent balls revolving within their sockets. The primary feathers, which are of no abnormal length, are also of great beauty, the shafts being blue and the webs spotted with dark brown shaded with rufous on a cream-coloured ground, while on the inner web is inlaid a band of rufous minutely spotted with white and giving the appearance of a separate feather.

William Beebe is probably the only white man who has seen the Argus Pheasant display in its wild state, but this phenomenon was observed in captivity a long time ago, both by the late A. D. Bartlett and T. W. Wood, the latter being not only a very good observer but also a skilful artist. He made a drawing of the bird in display, which is a most clever piece of work considering the difficulty of the subject ; though it is not surprising that a detail such as the position of the head in relation to the wing is not quite accurate.

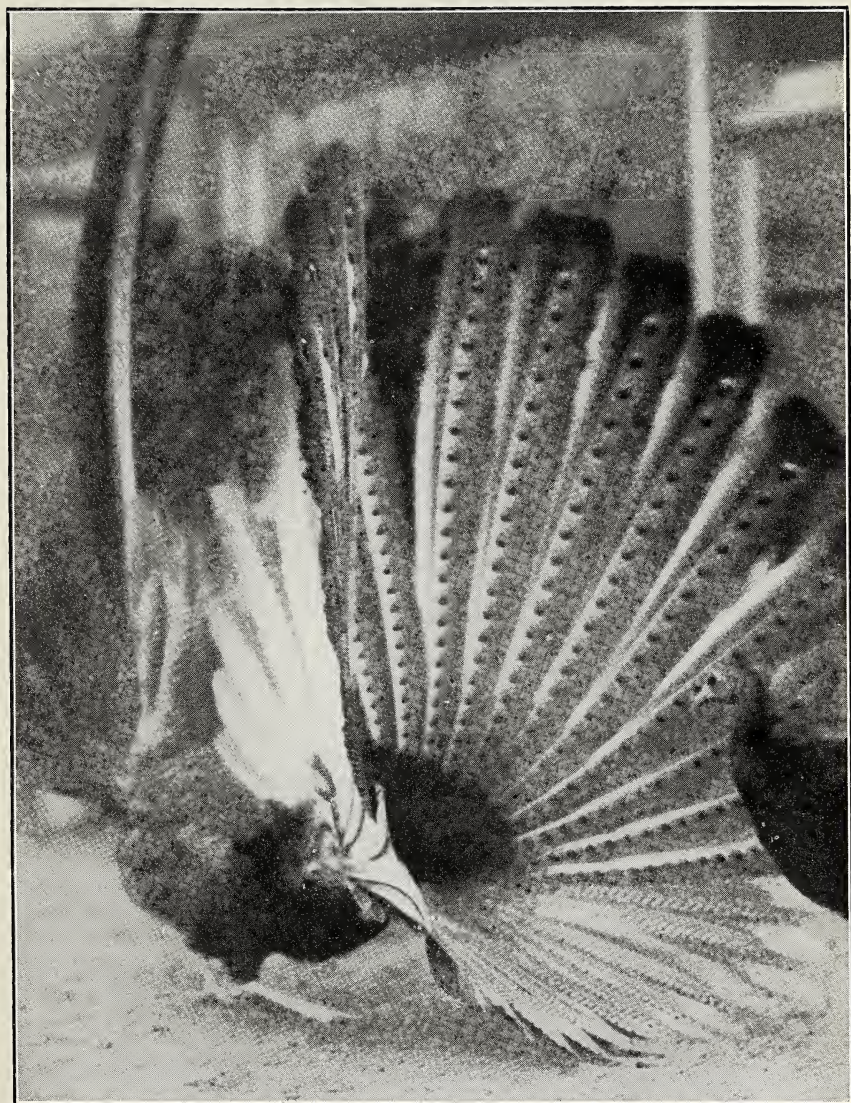
I have seen the display on many occasions during the present year as well as once in 1912. At its commencement the cock-bird walks round the hen in a wide circle with bent neck and high steps like a well-trained carriage-horse, at every step stamping loudly upon the ground. He continues with narrowing circles and as he approaches the hen-bird suddenly lowers the wing nearest her and performs a lateral display as he rushes past her. This may occur several times, but if she does not walk right away he will then face her and very suddenly erect his wings into a huge screen held well in front of the body, while the head is held behind one of the wings (Fig. 1). The tail, with its long central feathers, is jerked forward and backward, the long upper tail-coverts remaining erect. The comparatively short primary feathers are pressed against the ground and the whole bird sways gently backwards and forwards while a rustling sound is heard.

With the head held *behind* one of the wings, the question arises as to how the bird contrives to see the hen, who is the supreme object of his attentions. Bartlett believed that in order to do so he pushed his head between the feathers of the wing and even went so far as to state that the secondary feathers at one point became frayed in the process ! Darwin (*Descent of Man*) writes : “ the bird, in order to see the female before whom he is displaying himself, sometimes pushes

his head between two of the long wing feathers (as Mr. Bartlett has seen), and then presents a grotesque appearance. This must be a frequent habit with the bird in a state of Nature, for Mr. Bartlett and his son, on examining some perfect skins sent from the East, found a place between two of the feathers which was much frayed, as if the head had here frequently been pushed through." Beebe, following Darwin, who got his information from Bartlett, writes: "Naturally the bird is rather anxious now and then to see what effect the display of his beauties has upon the female, or if indeed she is still present; and to accomplish this the head is poked through between two of the feathers, either of the right or left wing, a momentary glance taken, and the head withdrawn. Thus through the peep-hole in his living curtain the feathered actor is able to keep watch upon his audience. In old males shot toward the end of the breeding season, it is possible to locate this peep-hole by the rather disturbed, frayed condition of the web in its immediate vicinity. It seems to be confined to one side, each individual Argus being either right or left-winged in this respect."

He goes on to say that he has seen this display a number of times in captivity and once in the wild state, and this being so it is a pity he did not observe it more carefully, when he would have seen that the bird is able to watch the female during the whole time he is displaying, not by the crude method suggested of poking his head between the secondary wing-feathers, a process which I believe originated in Bartlett's imagination, but by looking *between the wings*.

A glance at the photograph (Fig. 2) will show that in the position in which the head is held it would be impossible for the bird to poke its head between the secondaries: it could not reach that position. Wood's drawing, published in the *Descent of Man* and in Tegatiner's *Pheasants*, gives the impression that it could do so, but the position of the head in relation to the secondary feathers in the drawing is inaccurate. The two cock-birds at the Zoological Gardens are very tame and during the display are wholly indifferent to the presence of human beings, and I and Keeper MacDonald have on several occasions been able to obtain a view of the displaying bird from directly in front, at a distance of not more than 2 or 3 feet, when the eye of the bird, peering through the opening formed by the angle of the wing, was

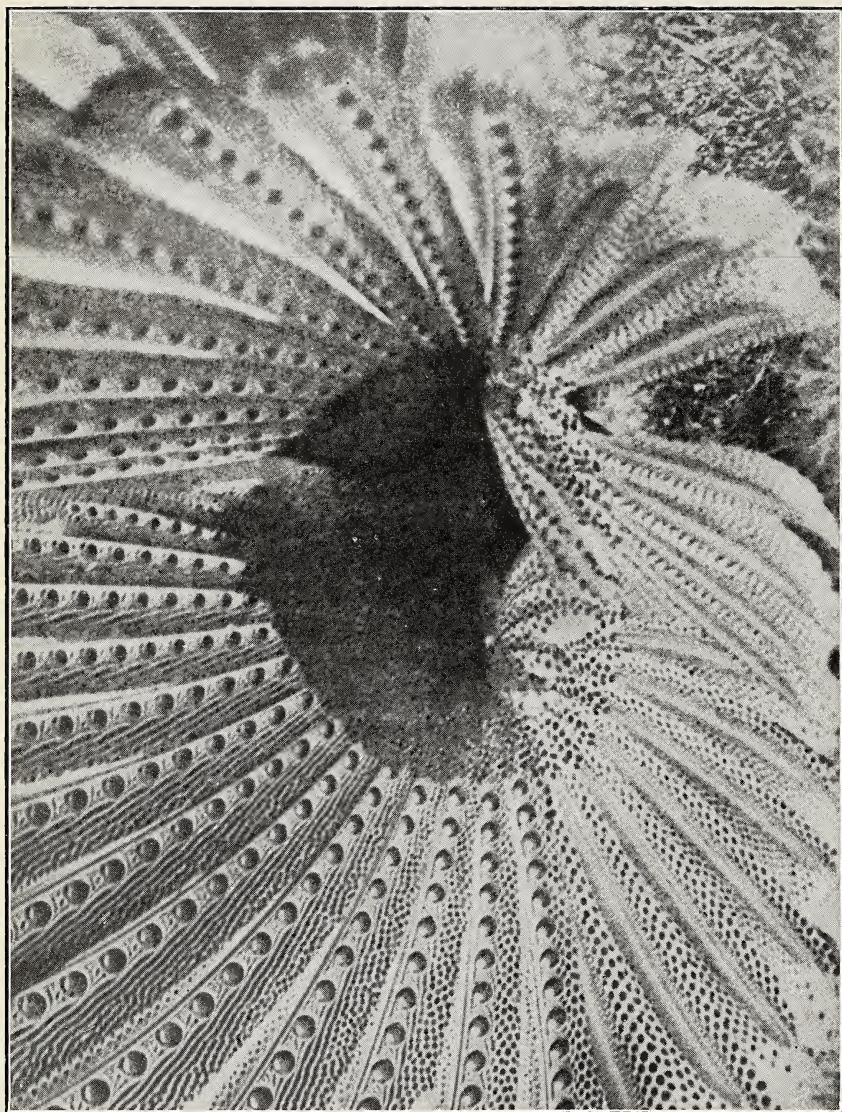


Display of the Argus Pheasant.

FIG. 4.

D. Seth-Smith.

[To face p. 178.]



Neville Kingston.

Display of the Argus Pheasant.

FIG. 3.—Eye can be seen peering between the wings.

clearly visible. My friend, Mr. Neville Kingston, was successful in obtaining a photograph which clearly shows this, and I am much indebted to him for allowing me to reproduce it here. (Fig. 3.)

Regarding Beebe's statement that each individual Argus is either right- or left-winged, in my paper published in the *Proceedings of the Zoological Society*, 1925, Part 1, I stated that I had only seen the head held behind the *right* wing. Since then I have seen the same bird hold the head behind the left wing, and during a prolonged series of displays he would use the right or left wing position as it suited him best. Thus, if the hen were towards his left side he would obtain the best view of her by holding the head behind the right wing and looking through the opening with his left eye. If she were towards the right side he would adopt the opposite position, and if directly in front either side would serve his purpose. It has been frequently stated that the hen bird appears to be quite indifferent to the advances of her mate, and this is usually the case with most species, but in the case of the Argus Pheasant I have noticed that as a rule the hen does appear to be quite appreciative of what is going on. In fact, as a rule, unless she advances towards him or stands still as he approaches, he will not display; and on several occasions I have noticed that as he displays she walks up to him and appears to look directly into the centre of the brilliant feathery screen in front of her. (Fig. 4.)

OBITUARY

HUBERT DELAVAL ASTLEY

Members of the Avicultural Society and everyone interested in bird life will feel deeply the death of our President, which occurred at his home, Brinsop Court, near Hereford, on 26th May, after a long and painful illness.

Mr. Astley was born on 14th July, 1860; a cousin of the 21st Baron Hastings, he was the son of the late Francis Le Strange Astley, Lieut.-Colonel of the Norfolk Artillery, and of the late Mrs. Frankland Russell Astley, of Chequers Court, Bucks; he spent his childhood in that beautiful place, now the official country home of the British Prime Minister.

Educated at Eton, at Christ Church College, Oxford—of which he was M.A.—and at Cuddeston Theological College, Mr. Astley was ordained a clergyman of the Church of England in 1886 and held several clerical appointments until 1899.

In 1895 he married Lady Sutton, widow of the late Sir Richard F. Sutton, Bart., of Benham Park, Newbury, Berks, whose only son by her first marriage, Captain Sir Richard V. Sutton, Bart., M.C., died of pneumonia in hospital in France in November, 1918; he had served in the war with great distinction and had twice been wounded. Mr. Astley had one daughter, the Hon. Mrs. Humphrey Wyndham, and one son, Captain Philip R. Astley, M.C., of the 1st Life Guards.

All those who were fortunate enough to know Mr. Astley have been struck by his wonderful personality. He was a man of many activities: religion, arts, travels, archæology, natural history, and horticulture were his principal occupations, and his knowledge of each was great. Uncommonly gifted, he wrote and sketched charmingly and humorously. In 1900 he produced a delightful book, *My Birds in Freedom and Captivity*, a chef-d'œuvre of keen observation, as well as of clever style, which he illustrated himself.

Before all, Mr. Astley was a lover of birds and an aviculturist; he kept pets near him from his earlier years, and as soon as circumstances allowed, he gathered a large collection. At the same time he made accurate observations and numerous sketches of wild and captive birds, both at home and on the Continent, in North Africa and the Canary Islands. Also he was as keen a protectionist as an aviculturist.

Artistic as he was Mr. Astley always arranged his cages, aviaries, and enclosures with wonderful taste; everything with him was picturesque and pretty, as well as practical and convenient. First at Chequers Court, afterwards at Benham Park and at his Italian Villa on the Lake of Como, at Varenna, and later on at Brinsop Court, he kept numbers of rare and fine birds in lovely surroundings; his cages and aviaries, like his house and gardens, showed the mark of his most original and tasteful mind. Fortunately, the AVICULTURAL MAGAZINE, since 1895, has contained several accounts and views of his birds and aviaries, so that future generations will be able to realize what a clever naturalist and artist could do in our times. . . . It is impossible

here to enumerate all the birds which have been kept for the first time in Europe by Mr. Astley; there is hardly a family a species of which he did not try to succeed in keeping. Among the greatest rarities, we might mention Queen Alexandra's Parrakeets, Fairy Blue-birds, Yellow-headed Gouldian Finches, Lidth's Jays, several Niltavas, Pittas, Woodpeckers, Sunbirds, and Humming-birds, while his collections of Waterfowl, Cranes, Flamingoes, Doves, Pigeons, and Parrakeets were always among the best in the world.

In a coming number, we shall hope to give an account of his collection, as it was in May last, with coloured plates from his own drawings, which Mrs. Astley's generosity enables us to print. His breeding successes have been very numerous; even last year a young Australian Crane, several Queen Alexandra's Parrakeets, and numerous White-breasted Doves, among others, were reared at Brinsop. He was the first to breed Queen Alexandra's and Hooded Parrakeets, Rose-breasted Grosbeaks, and Orange-headed Ground-Thrushes, and was awarded medals for these.

In 1914, the Société Nationale d'Acclimatation de France awarded him its great silver medal for his successes in keeping and breeding rare birds, and also for his work as contributor and editor to the *AVICULTURAL MAGAZINE*.

Mr. Astley was first elected a member of the Council of the Avicultural Society in 1895, and ever since was one of its main contributors. He drew the design for its present cover in 1909, and took up the editorship in 1912, keeping it until 1917. In spite of growing difficulties, he managed to make the Magazine bright and lively to an extraordinary degree. In 1921, he was elected President, and then directed the Society with considerable ability and authority.

Mr. Astley was also a Fellow of the Zoological Society of London, and a member of the British Ornithologists Union and of the Société Nationale d'Acclimatation de France. His knowledge of the French and Italian languages enabled him to make many friends abroad, where he was nearly as well known and appreciated as in England.

Besides his great merits as a naturalist and an artist, besides his bright intelligence and intense activity, Mr. Astley had the kindest heart, and was in the highest degree a perfect gentleman. His

prominent personality will be sadly missed by his friends; his great and particular affection to the present writer will for ever remain as a precious memory, and in the name of all who knew and loved him, we bid him farewell.

J. D.

ARTHUR GARDINER BUTLER

Dr. Arthur G. Butler, who has been an active member of the Avicultural Society since its foundation, more than thirty years ago, died at his residence in Beckenham, Kent, on 28th May, at the age of 80. From early youth Arthur Gardiner Butler took a keen interest in Natural History, his tastes at first tending towards entomology; and in 1863 he entered the service of the British Museum as a systematic entomologist under Dr. J. E. Gray, and later under Dr. Gunther. He was appointed Assistant Keeper in 1879, a post which he held until his retirement in 1901. Of the large amount of scientific work on insects carried out by Dr. Butler we need say no more here, but the very excellent condition of the collection at the present time is largely due to his work. He was always a keen student of British birds and his scientific training fitted him well for the thorough working of a hobby which during his appointment at the Museum he had little time to indulge in, that of the keeping and studying of foreign birds, which he took up whole-heartedly as soon as he was able. The volumes of the *AVICULTURAL MAGAZINE* from its commencement bear testimony to the scientific methods adopted by A. G. Butler in aviculture and his books on the subject have been of the greatest help to aviculturists. With old age he allowed his collection to gradually decrease, and as his birds died off at a ripe old age he did not replace them but contented himself with another hobby, that of gardening, which was also dear to his heart. But even at the age of 80 his interest in aviculture and the *AVICULTURAL MAGAZINE* had not died out; for he wrote a letter to the June number which he was not permitted to see in print, as he died two days before it appeared. For many years Dr. Butler acted as Honorary Correspondence Secretary, and the great help he gave the present writer during a former and lengthy term of Editorship is gratefully remembered.

D. S.S.



The late Dr. Arthur G. Butler

From a photograph taken in his aviary by D. Seth-Smith.

[To face p 182.

CORRESPONDENCE

A BUDGERIGAR FARM

SIR,—A friend of mine is considering starting a “Budgerigar Farm”, and I am writing to ask you to be kind enough to answer a few particulars.

Could you suggest an ideal *outdoor* aviary for, say, twenty-five pairs, as a start?

Also what would be, roughly, a good year's breeding? Would a mixture of canary and white millet, in equal parts, be sufficient diet, with green food added?

Any other suggestions you could make will be greatly appreciated.

THOS. L. S. DOOLY.

[We hope soon to publish an account of a large breeding establishment for Budgerigars in France, where many thousands are bred annually.]

For twenty-five pairs we would suggest an aviary of say four compartments, each to contain six or seven pairs and to have a covered shelter and a flight, each of about 10 feet square and 8 feet or so in height, so that the whole aviary would cover an area of 40 by 20 feet. We have found that the addition of soaked bread is useful while young are being fed, and plain canary seed is preferable to canary and millet. Chickweed and flowering grass should be given *ad lib*.

In such an aviary, with the stock suggested, you might produce from 150 to 200 birds in the season—with luck.

It is advisable to separate the sexes in the autumn.—ED.]

LOVEBIRDS

SIR,—As a member of the Avicultural Society, allow me to ask you for information about the Lovebirds from Tanganyika, of which you speak in the last number of the Magazine. Are the Masked Lovebirds the same as the *Agapornis nigrigenis* (Black-cheeked Lovebirds)? When I read your colour description of the *A. personata* and I compared it with the description and the picture of the *A. nigrigenis* in the new *Neunzig*, it seemed to me as if it was the same. But otherwise I cannot believe it to be the same, as you say they have never before been imported alive to Europe.

I would be very thankful if you would be so kind as to give me some information concerning this misunderstanding, and I hope you will not mind my asking you this.

DR. LUIG.

BRUSSELS.

[Although there is a certain amount of similarity in the colouring of the two Lovebirds referred to in Dr. Luig's letter, they are quite distinct. A good coloured figure of *Agapornis nigrigenis* appeared in the AVICULTURAL MAGAZINE of October, 1908, and from this it will be seen that only the cheeks are black, or blackish, the forehead and crown being reddish brown and the throat orange. The species occurs in Rhodesia, and was first discovered as recently as 1906. *Agapornis personata* has practically the whole of the head black, which fades away into a very distinct collar of yellow encircling the neck and extending on to the chest. It inhabits the country surrounding the Victoria Nyanza and Tanganyika. The coloured figures of *A. personata* and *A. fischeri* in the *Journal für Ornithologie* appeared in the volume for 1889, not 1887, as stated in our last number.—ED.]

MEALWORM BREEDING (p. 98)

SIR,—In fairness to the author whose work I translated, I should like to make clear that the translation begins on p. 99 (para. 2) with the words "Of all the insects . . ." and continues to the end of the article (p. 102).

This is not quite obvious as printed, and I ought to have separated my introductory half-page (as far as ". . . worth to me ") from the remainder, the translation itself.

E. HOPKINSON.

THE ANNUAL MEETING AND GARDEN PARTY

This will be held, as before, in the Zoological Gardens, on Saturday, 18th July. Tea, to which all members are cordially invited, will be served in the Fellows' Pavilion at 4 p.m.

Will all members who intend to be present kindly notify the Hon. Secretary, Miss Knobel, 32 Tavistock Square, London, W.C. 1, before 16th July.

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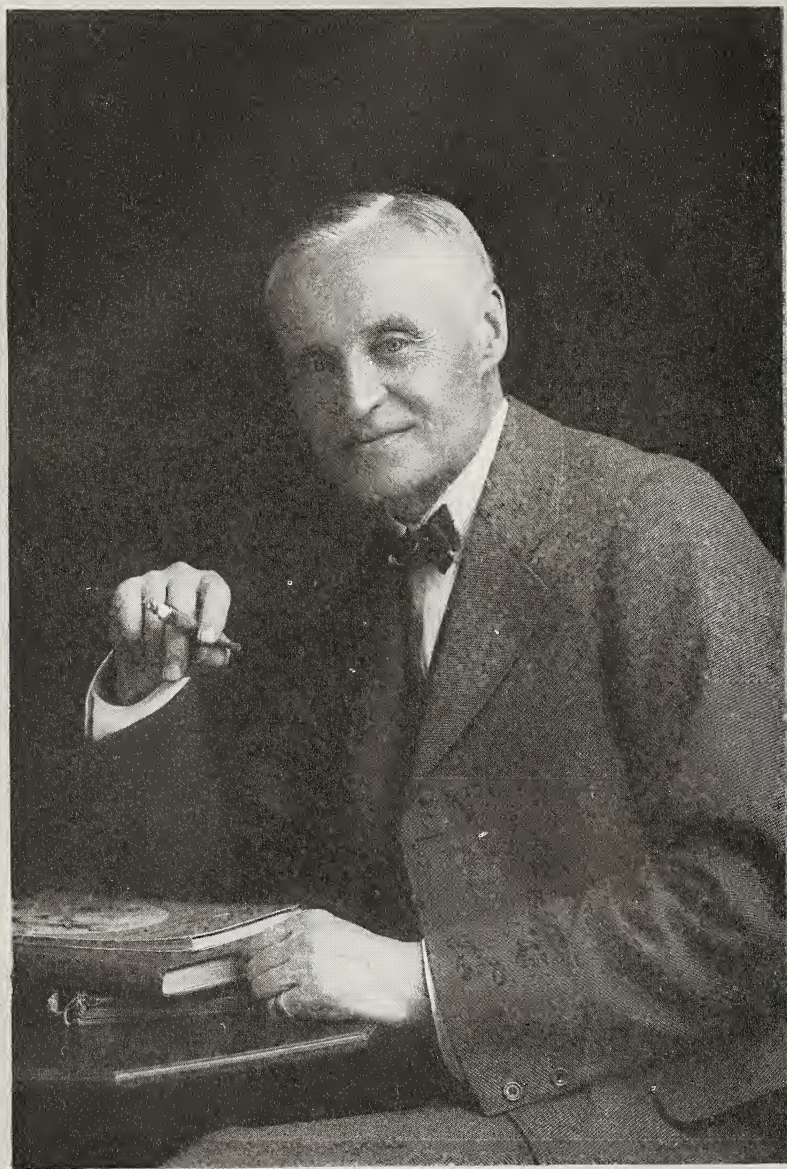
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THE AVICULTURAL MAGAZINE

BEING THE JOURNAL OF
THE AVICULTURAL SOCIETY
FOR THE STUDY OF
FOREIGN & BRITISH BIRDS
IN FREEDOM & CAPTIVITY

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AUGUST, 1925.

THE BREEDING OF THE BLACK-HEADED SIBIA (*LIOPTILA CAPISTRATA*)

By ALBERT SHERRIFF

I am told that the above birds have never yet been bred in captivity; so that an account of a pair that I have, which at the second attempt have succeeded in rearing two young, may be of interest to members.

The cock has been in my possession for three years. I obtained him out of a shipment of birds that had just arrived from India. The hen had spent a considerable time in a London shop before I bought her.

Prior to the purchase of the hen the cock Sibia was very affectionate towards a Brown-eared Bulbul and the two always roosted together, and the Sibia was constantly caressing the Bulbul, which I should imagine was a hen.

As soon as the hen Sibia was introduced into the aviary the cock deserted his first love and the antics he performed were really ridiculous to watch and were at the same time most interesting. I felt absolutely assured that I had been fortunate enough to obtain a true pair. The poor Bulbul suffered rather a bad time from the hen Sibia, as the latter was on no account going to lose her new found mate.

As is known the sexes are very difficult to distinguish, though I can always differentiate between my two birds as the hen is duller than the cock and possibly less active. The former distinction may, however, be due to the fact that the hen spent a considerable time in

a London shop, while the cock has lived in a large flight aviary since his arrival in this country.

I had made up my mind to try and breed these birds, and so in February of this year the two birds were turned out alone, with the exception of a pair of Painted Quails, into a large flight aviary with a heated shelter attached. The aviary had one particular advantage which I believe partly accounted for the success in rearing the birds. The height from the ground was 16 to 18 feet at the back, and was built in the shape of a lean-to against a wall. Further, it is the warmest place in the garden, and although it does not get the early morning sun the wall has the effect of retaining a considerable heat from the evening sun.

In early April the cock was seen to be carrying nesting material which had been put into the aviary, and within a week the nest was completed. In shape it was the ordinary open type, rather like that of a Blackbird, but slightly smaller. It was made of hay and the inner part was lined with dead leaves, hair, and fine grass. Strangely enough the first time the nest was built only about 4 feet from the ground in a bay-tree. The hen maintained complete apathy during the time occupied by the building of the nest and for about ten days afterwards, so much so in fact that I imagined the attempt to breed the birds would end there.

However, one morning the gardener informed me that there was one egg in the nest, and the next morning the hen was sitting on two. Everything went well for a week until one morning on going to give the birds their usual allowance of mealworms I discovered that the cock was on the nest. When, however, the mealworms were thrown into the cage he immediately jumped off the nest but I did not at that time see any harm. In the evening, however, both birds were off and apparently were taking no interest whatever in the nest. On looking I discovered one egg, which was cracked and the second egg had disappeared completely. I was very disappointed. I believe that in his anxiety to obtain the mealworms the cock bird left the nest carelessly and broke both eggs with his claws. I can see no other reason which can possibly account for it.

I determined, however, to give them a further trial, and four or five

•

days afterwards the cock was again building ; this time high up in a prunus-tree, about 10 feet above the level of the path, which tree had got little in the nature of leaves on it as it was its first year in that particular position. The hen on this occasion seemed to take rather more interest in the nest, and I actually once saw her carry a piece of hay up to the cock as though to suggest that he was getting on very slowly with the nest, and she would often sit on a twig by the nest while he was engaged in the building of it.

On the morning of the 19th May the hen was again sitting—presumably on two eggs, but owing to the height from the ground it was impossible to see. The birds both sat very tight and allowed anybody to approach right up to the aviary without getting disturbed. As far as possible, however, nobody was allowed near. Fifteen days after the young were hatched, as could be seen by the fact that the older birds were carrying food to the nest. I was sorry that I could not see the condition of the young at this time, but this was due to the height of the nest from the ground, as mentioned before. Within four days the young could be seen putting their heads up to receive food and at that time appeared to be covered with grey down.

The parents were assiduous in the feeding, and to this end, were kept well supplied with spiders, caterpillars, and mealworms. Green and black fly were given them in large quantities and they appreciated this very much, as could be seen by the way they licked them off the leaves. The nest was apparently kept scrupulously clean and, as is the case in a lot of young birds, the excreta is in the form of a pellicle, and I often saw the hen take it out of the nest and, strangely enough, carry it to the further end of the aviary before dropping it. When mealworms were given the older birds immediately came down and took them to the young and it was very interesting to note that in the presence of a stranger the cock would always utter his warning note if the young showed above the nest, and naturally they immediately dropped down out of sight. The hen, however, was not so particular, and would take worms to the young in full view of anyone, provided they kept still. The cock strongly disapproved of this procedure.

On the seventeenth day after hatching the young left the nest. They were fully fledged with the exception of the tail and crest. The former

is still quite short and the crest is not yet fully developed. There is still a small amount of white round the gape.

Owing to the cold nights which we have had recently, I put both the young birds in the shelter where the parents still tend them carefully. One seems to be slightly stronger than the other, but up till now, which is a week since they have left the nest, both are doing well.

THE DIPLOMAT

By the MARQUESS OF TAVISTOCK

He came to me late in the autumn of 1923. He had lost most of his toes, had a permanent injury to one eye, was very short of breath, never stopped moulting, and had every mark of extreme age. Altogether he was as scrubby an old crock of a Mealy Rosella as I ever set eyes on. His mate, a much younger and finer bird, caught a chill and died soon after her arrival, and as I did not much mind what happened to the widower, who was obviously quite useless either for exhibition or breeding, I turned him loose to take his chance in the garden. Why he did not die a dozen times over during that long and severe winter I cannot imagine. But frost and fog and bitter wind made not the least impression upon him. Moreover, in spite of his age and infirmities, it soon became apparent that his heart was still young and open to the influence of female allurements. In my aviaries was an unmated Brown's Parrakeet, and it was upon her that the Mealy set his affections. Unfortunately, however, he had a rival—an old cock Brown's, too aged to breed, who had been living for some years as a pensioner at liberty. Although the Brown's was long past his prime he was still a more vigorous bird than the Mealy, and more than a match for him in a fight. Many were the battles that raged round the aviary. The Mealy would fight the Brown's as long as he could, and even when temporarily defeated he would dodge the victor round and round the hen's abode until he flopped exhausted on the grass hardly able to fly another yard. This went on for nearly nine months until I happened to release a cock Pennant who had been confined all the

summer. Then the Mealy saw his opportunity. He made himself most agreeable to the Pennant and showed him round the garden, at the same time preserving a meek and deferential attitude towards him. He even introduced him to the hen Brown's, and I fully believe used to tell him that she was more than a little impressed with his beauty and gallantry. But this was not all. While he appeared to encourage the Pennant's interest in the hen Brown's he never lost an opportunity of making bad blood between him and the cock. Over and over again I saw him start a quarrel with the cock Brown's and then retire to let the Pennant finish the fight for him. Very soon the Pennant grew to detest the Brown's as cordially as did the Mealy himself, and he went for him on every possible occasion. If the Brown's had kept out of his way it would have been all right, but the sight of the Pennant showing off to the lady he regarded as his mate was too much for his discretion and he stood up to him over and over again, only to get heavily punished by the big bird nearly twice his size and still in the prime of life. Several times I interfered on the Brown's behalf and tried to drive the Pennant away, but it was of no use; as soon as I was gone the Mealy enticed him back again. At last I saw the Brown's get a bad bite and he flew off very weak and wobbly. A day or two later he vanished altogether, and I have little doubt that his enemies knew what became of him. The Mealy had got rid of his original rival, but only, it seemed to me, by substituting another more formidable one in his place. Would he resign himself to the unsatisfactory rôle of playing gooseberry, or would he try and oust the Pennant by main force and so share the fate of the Brown's. I soon found, however, that I had under-estimated his intelligence. The Pennant was certainly attracted by the hen Brown's, but he had been many months in confinement and liberty had other delights to offer besides the chance of sitting all day on the top of an aviary. There were all sorts of delicious wild foods in remote parts of the garden, and cosy sheltered corners when the wind was sweeping across the lower field. So the Pennant was sometimes absent from the chief centre of interest, but the Mealy watched the aviary as a cat watches a mouse, and directly he saw he was alone he would fly down and pay compliments to the Brown's and offer to feed her, with such success

that she soon came to prefer the more attentive suitor to the one who was often absent. So before long the Pennant found that his visits were received with cold indifference. The Mealy was as polite as ever, though I fancy I caught the suggestion of a wink in the one eye that he still had under proper control, but the Brown's simply ignored the Pennant altogether. There are some birds that will continue to press an unsuccessful suit on the most unresponsive female, but a cock Broadtail is not one of them. Proud and hasty-tempered, he expects his advances to be received by the lady of his choice with a proper blend of appreciation and modesty. A too forward and saucy minx he puts in her place in no uncertain fashion, while a hen who is indifferent to him he simply has no further use for. So when the Pennant found that his visits to the Brown's were no longer welcomed he simply cleared off and took no more interest in her than he did in the Barrabands next door. The diplomat had won. Ancient, dishevelled, lame, and half blind though he be, he comes to the aviary the Brown's accepted mate. The race is not always to the swift, nor the battle to the strong. In the long run it's brains that count !

THE HABITS OF LORIES

Miss R. G. Cross sends the following extracts from a letter she has received from Mr. Wilfred Frost :—

“ A paragraph in an ornithological periodical anent the Yellow backed Lory (*L. flavopalliatu*s) ‘ associating, as these birds are wont to do, in flocks of large size ’, leads me to make the following observations :

“ Lories *never* flock : I am speaking of *all* species ; they invariably travel in pairs, or couples. Granted they may assemble at times in crowds numbering many hundreds on a tree or trees to feed on blossoms or fruit, but once settled it would take an exceptionally sharp eye, even with the aid of field glasses, to detect a single specimen, and any way observation would show that they would all eventually depart, as they arrived, in pairs, widely separated. Nearly twenty years of watching, trapping, carrying, and caring for Lories of every

species yet introduced to Aviculture has enabled me to form a fairly accurate and comprehensive idea of their little ways and temperaments.

“The bird to which you refer (*L. flavopalliatu*s) was probably purchased at Ternate, and no doubt originally from the adjoining mainland of Halmaheira or Gilolo as indicated on old maps and charts. The species *L. flavopalliatu*s and *L. garrulu*s occur also on Batchian, and I have even met with a few stray specimens on the North Coast of Obi; but the common name of Ceram Lory is a misnomer, the species being absolutely unknown in a wild state in that island, *L. domicella*, the Purple-capped Lory, being the common Lory of Ceram, to which locality it is confined.

“As far as I can gather, the Yellow-backed Lory is as plentiful on Batchian as on Halmaheira, but curiously enough I have never yet met with a specimen in captivity there, whereas at Ternate (which by the way is merely a more or less dormant volcano, with no resident Lory of its own) the species may at any time be purchased in scores from the Halmaheira natives, who come across the bay to meet the ships, bringing caneloads of White-crested Cockatoos, *Tanygnathu*s, Great-billed Parrots, Eclectus, Yellow-backed Lories, and immense numbers of Violet-necked Lories.

“At present I have only two old friends that always accompany me, a *Chalcopsittacus insignis* (Red-quilled Lory) and a *Chalcopsittacus scintillatu*s (Yellow-streaked Lory). The former is the only one of its species I have ever met with: it talks and acts, and is altogether a wonderful chum; the other is a trapped bird, and although tame and docile enough now will never, I am afraid, sufficiently overcome its initial timidity to become affectionate and accomplished in any way. Still the two make very good company for each other, and incidentally quite a fine contrast in colour effect.”

Dr. E. Hopkinson, C.M.G., D.S.O., has just arrived in England from the Gambia with several interesting birds, amongst which are two beautiful Sprees, *Spreo pulcher*, one West African Golden Oriole, *Oriolus auratus*, and one Blue-breasted Roller, *Coracias cyanogaster*. We believe all three species to be new to aviculture.

THE WOODPECKERS

By J. DELACOUR and M. LEGENDRE

The Woodpecker family contains a great many birds which inhabit, according to their species, large forests, woods, or orchards. They are spread all over the surface of the globe, with the exception of Madagascar, Australia, and Polynesia.

These birds are very agile climbers and are distinguished by the following characteristics: beak as long as the head, very massive, straight, and shaped like a real working tool; tongue slender and very long, provided with small lateral hooks and constantly covered with sticky saliva; this tongue, thanks to a special apparatus, can be swiftly projected for some way beyond the beak, and permits the bird to pick up rapidly the insects hidden in galleries or under the bark of wood. The tail consists of strong and slightly curved feathers; when the Woodpecker climbs these feathers are pressed against the trunk of the tree and partly support the weight of the body. Tarsi are extremely short and powerful; two toes are in front and two behind; they are provided with heavy claws, curved and sharp.

Woodpeckers live chiefly on insects, either in the perfect state or as larvæ; many take fruit, nuts and walnuts in winter, and some even store them up. The flight is undulating and generally short. They are not great travellers, and breed and sleep in holes in trees which they have often made themselves. The eggs, of which the number varies according to the species, are more or less shining white. They have no song; their calls are not musical; they have a habit of producing by rapidly repeated blows with their beaks, a kind of drumming, which serves to drive out insects and also as a call, for by imitating this noise it is very easy to call up Woodpeckers.

Every bird has a charm for the bird lover by qualities peculiar to its kind; some are kept on account of the beauty of their plumage, some for their song, some for their pleasant natures. Woodpeckers surely are prized for the harmonious and rich colouring of their plumage and also for their tameness, which makes them, when domesticated, as interesting as Parrots. They can be kept loose in a room, or on a chain fastened to a perch, or in a cage.



LESSER NILTAVA (1/2)
(*Niltava macgregoriae*)

BLUE CHATTERER (1/2)
(*Cotinga cincta*)

SCARLET MINIVET (1/2)
(*Pericrocotus speciosus*)

COCK-OF-THE-ROCK (1/4)
(*Rupicola rupicola*)

WHITE-STARRED BUSH-ROBIN (1/2)

HOODED PITTA (1/3)

Loose in a room they become very familiar. A Middle Woodpecker, which we had thus kept for a long time, would always come to perch on us, or, if he happened to be on the ground, would hop on to our boots and climb up round and round our bodies. Arrived on our shoulders our shirt-collar interested him, and he would amuse himself by striking it with his beak. He would come when called by name, hid his nuts in every corner, and put the cat to flight in order to steal her food. Unfortunately, everything made of wood bore the marks of his beak. In any case the tameness and amusing habits of these birds are a great recommendation.

Many people, not feeling inclined to put up with the trouble and damage of a Woodpecker at liberty, fasten it by a chain to a perch ; treated in this way the bird is very amusing and will allow himself to be caressed. The perch should be made of two fairly thick pieces of wood with the bark on.

When caged Woodpeckers require a fairly large place strengthened with metal. Branches fastened vertically are necessary for them to climb, for without ceasing they climb to the end of a branch and then fly to the ground and begin to climb again at once. If they are not given branches they climb up and down the wire netting of their cage and break their tails.

All the European kinds and a fairly large number of foreign ones have been kept in captivity. The Green Woodpecker and the Ashy Woodpecker are in my opinion the noisiest and perhaps the wildest. The Little Woodpecker (small spotted) is the most delicate on account of its chiefly insectivorous diet. Their food should consist of insectile mixture, beech nuts, hazel nuts, and some seed ; insects, and above all when in season, ants' nests. For the larger kinds a little meat (bullock's heart) cut into wormlike pieces. They require a shelter in which to pass the night.

Woodpeckers are arranged in numerous genera ; we will speak first of the best known species of Western Europe.

The Black Woodpecker (*Picus martius*) is the largest European Woodpecker (43 to 49 centimetres in length). The whole body is jet black, but the crown of the head from forehead to occiput a fine crimson red. It is chiefly found in the depths of large pine forests, where it

lives in pairs ; it nests in a very large cavity and lays three to five eggs. In Europe it occurs as far as the Mediterranean, in Asia as far as Japan ; it is found in the forests in the East of France. In 1910 while we lay hidden in one of the fine forests of the Vosges on the look out for Capercalie, we had the pleasure of observing a pair of this fine Woodpecker, and could easily realize how well it was suited to its calm and majestic surroundings.

The Green Woodpecker (*Gecinus viridis*) has the upper portion of the head, the occiput, and moustache bright red ; the upper parts are a beautiful shade of green, the lower yellowish white, and the rump greenish yellow. The hen has a black moustache and less red on the head. This Woodpecker is sedentary and common ; it may be seen in woods and parks shaded by large forest trees. It is more often seen on the ground than the other kinds, popping about after insects, especially ants and their eggs, of which it is particularly fond. Its well-known, often repeated call is supposed by some to foretell rain. It is found in Central Europe. A sub-species, *Gecinus viridis sharpei*, inhabits Spain and Portugal.

The Ashy Woodpecker (*Gecinus canus*) differs from the above in having yellowish green plumage ; the male has the forehead only ornamented with crimson ; the female has no red on her head, which is ashy. It has the same habits and pretty much the same habitat as the Green Woodpecker, but is much rarer in Western Europe.

The Pied Woodpecker (*Dendrocopus major*) has lustrous black plumage adorned with white, with the under parts dirty white. A reddish-white band across the forehead, the occiput bright red, also the lower belly and under the tail. The hen has no red on her head. It has much the same habits as the Green Woodpecker, but is less confiding, for at the least noise it clings motionless against a tree. It is a native of Europe. Numerous sub-species replace it in Corsica, in Great Britain (*D. m. paroti* and *D. m. anglicus*), in the Canary Isles (*D. m. canariensis*), in Russia, etc.

The Middle Woodpecker (*Dendrocoptes medius*) is often confounded with the foregoing, but is smaller (21 to 22 centimetres against Pied Woodpecker's 24 to 26 centimetres). Its plumage is likewise black and white, but the sides are washed with pink. Both the male and

female have the top of the head and the nape ornamented with slender feathers less vivid red than the Pied. It has the same habits and is found in the same localities as the foregoing ; but is much rarer and somewhat intermittent. It is found in Europe from South Sweden to the Mediterranean. A sub-species (*D. m. sancti-johannis*) is found in South-East Europe and Asia Minor.

The White-backed Woodpecker (*Dendrocopus leuconotus*) has the top of the head and nape red, back and rump white ; wings black ; lower parts also white and rose-coloured sides. The moustache is black and the lower belly red. The hen may be distinguished by her black head. It has the same habits as the pied Woodpecker. It is found in Central and Eastern Europe, and has been met with in France (Jura to Pyrenees). There are sub-species in Northern Russia and Siberia.

The Lesser Spotted Woodpecker (*Dendrocopus minor*) is the size of a Sparrow, and is the smallest European species. Its plumage is also black spotted with white like that of the Pied Woodpecker, but it has no red under the tail. The hen has no red on her head. This little species lives in woods, shrubberies, and orchards. It is not shy and often makes its nest near houses in the country ; it often has to defend its hole against Tits and Tree Sparrows. Is found in Middle Europe ; sub-species inhabit Russia and Asia.

The Three-toed Woodpecker (*Picoides tridactylus*) is very different from the other species. This bird has the top of the head a fine golden yellow, the upper part of the body black and white, below white with black streaks on the abdomen ; black moustache. The hen has no yellow on her head. It inhabits Northern and Central Europe and the mountains of the South (Alps and Jura in France). It is only met with in large forests and its ways and behaviour is the same as those of other Woodpeckers. There are several races of this species.

Of exotic Woodpeckers we chiefly receive American species ; but some Indian ones at times.

A specimen of the Golden-naped Woodpecker (*Chrysophlegma flavinucha*) has lived for the last six years in the late Mr. Astley's possession. It is a fine large bird, having olive green wings and back, with quills barred black and chestnut ; the head chestnut above,

white beneath, the nape adorned with a splendid golden crest ; the upper chest white, spotted black ; under parts grey ; tail black. It is found in India and Indo-China.

The Yellow-backed Woodpecker (*Brachypternus aurantius*) from Northern India is another large and magnificent species, which has once been imported. It has the crown of its head and the crest red, the back and a great part of the wings golden yellow ; the rest of the plumage is black and white.

Colaptes auratus from the Southern United States is a large bird with grey plumage of different shades barred with black ; a red spot on the nape ; face and throat vinous red.

Chloronerpes striatus from West Indies is of the usual type among American Woodpeckers : the crown, nape, and rump red ; wings and back barred greenish yellow and black ; tail black ; under parts tawny.

The *Melanerpes* make up a very numerous genus of American Woodpeckers of medium size ; several species have been imported and may occasionally be obtained from dealers. They do well in captivity.

Melanerpes erythrocephalus from the United States is very handsome ; the head, neck, and breast of the male are bright red, the large wing coverts and those of the tail and all the under parts white ; the back, the wings proper, and the tail are black.

M. candidus from Central S. America is white with the back, wings, and tail black ; a white line starts from the eye and reaches to the upper part of the back.

M. flavifrons is very pretty indeed. The male has black wings and tail ; the back is white, spotted with black ; forehead and throat yellow ; crown and nape red ; white breast, sides white, streaked black ; the belly red ; the female has no red on her head. They are natives of Southern Brazil and Paraguay.

M. supercilialis from Cuba is black, striped with white above ; dun underneath, with crown, nape, and the middle of the belly red. *M. wagleri*, *M. aurifrons*, and *M. santacruzi* only differ from the above in point of size and in the arrangement of the red or yellow on the crown of the head.

Dendrocopos villosus, cousin of our Pied Woodpecker, is white

and black with a red spot on the nape. It has been imported from Canada.

Celeus flavescens from Brazil is another large and beautiful Woodpecker, with head and large crest, back of the neck and the rump golden yellow, marked with red on the cheeks ; the under parts and tail are black ; the mantle is black spotted with yellow.

Campophilus principalis from the United States is a large black Woodpecker, with stripes from the beak to the shoulder and part of the wings white, and a red crest.

Before finishing we must mention the *Picumnus* ; tiny Woodpeckers spread over America and Asia, of which one Brazilian species (*P. cirrhatus*) has been imported. It is about the size of a Wren, brown, streaked tawny above ; white, with black spots underneath ; the front of the crown red and the back black stippled with white.

WRYNECKS

By M. LEGENDRE

In the classification of birds Wrynecks come immediately after Woodpeckers. They have certain affinities with the latter, first in having feet with two toes in front and two behind, secondly in their extendable tongue, terminating in a dart. But this is all. The Wryneck's straight, conical beak is the same as that of any other insect-feeding bird, and its tail has not sufficient strength to be a useful prop in climbing vertical branches. Unlike the Woodpeckers it does not climb long or often ; but for all that it hangs on to the trunks of trees and can remain a long time in a vertical position.

The Common Wryneck (*Iynx torquilla*) during its migration is spread over a great part of Europe. In winter it may be seen in Africa and through Asia to Japan. A sub-species (*Iynx t. tschusi*) differs from the type in being smaller and darker plumaged. Found in Corsica, Sardinia, and Italy. The Wryneck is a very curious bird. Its mysterious life and peculiar habits have always interested the naturalist, and many legends are woven round it. It is a migratory bird which returns every year to Europe, arriving a few days before the Cuckoo. Eighteen centimetres long, its beautiful plumage recalls

in design and colouring that of certain night moths. Its plumage is delicately stippled, striped, and streaked with cunning designs harmonizing delicately on a ground which shades from grey into chestnut, giving the illusion at a distance of a withered leaf or a particle of bark. Thanks to this perfect mimicry the bird often remains unseen. Therefore it is hard to know whether it is really abundant or not very common.

The name of Wryneck has been given it because of its exceptional power of twisting its head as though its neck were dislocated. Through all time it has attracted attention by its strange faculty of imitating a snake. In this way it goes through some really comic postures but which certainly alarm a good many of its foes.

When irritated or alarmed it first makes a very sudden movement and spreads its tail widely. Then it flattens itself, keeping its eyes wide open and fixed and its feathers tightly depressed except those on the head which stand on end; next, with body bent forward, it slowly moves its neck forward and then shoots it out with a sudden movement while giving a little hiss like a snake. It does this several times over. An adult captured bird very often goes through these movements in confinement. Young ones taken from the nest, tamed and used to confinement and people coming and going, only very rarely assume this wonderful attitude of the wild birds. In a state of nature danger and the instinct of self-defence develop faculties which have no meaning in captivity.

This bird nests once a year in a hole in a tree, where it lays six to eight pure white, very thin-shelled eggs. It lives on various insects—caterpillars, chrysalids, and flies—but prefers ants' eggs to everything else.

Few of our country's birds lead as solitary a life; it emigrates singly towards the beginning of September.

Wrynecks are birds which do well in confinement and are comparatively easy to rear. They are as contented among company in aviaries as alone in a Blackbird's cage. They make, indeed, charming pets which never trouble their fellow captives no matter how tiny. They become very tame, and soon learn to take mealworms from the hand. Without being dull they are not noisy, and often cling for

a long while to the wires, either resting or performing their toilet. They like, too, to hop about on the ground, where with spread tail they push their long tongues into every corner.

It is a large feeder ; it usually begins by thrusting its tongue into its food vessel to pick out its favourite morsels (such as ants' eggs) afterwards using its beak in normal fashion. It is in my mind that I have once or twice seen a wet Wryneck, but I cannot be positive. Certainly I have never seen them bathe ; but they drink a good deal. An adult Wryneck when caught should be fed for the first few days only on fresh ants' eggs and mealworms whose heads should be crushed in order that they may not escape. Then little by little insectivorous paste should be mixed with the ants' eggs and the mealworms, which last should be cut up into small pieces. In this way the Wryneck will get accustomed to eat the whole mixture, and it may be considered completely acclimatized when ants' eggs are no longer indispensable.

The bird-keeper who desires tame and healthy birds will find it best to take them from the nest and rear them by hand. Except for singing birds, which do not reach the full perfection of their song unless they have grown up in a state of nature, it is the only way to have birds fittest for cage life. They are easily reared at any stage of their growth, but I advise that they should be left until they are ready to leave the nest, in this way they will not take so long to rear as they will soon become independent of their owner's care.

If tame birds are desired Wrynecks are among the most suitable. They should then be held in the hand while they are being fed, and accustomed to come and perch on one's finger when called. Above all they should be given mealworms only when in this position. Wrynecks rarely appear in bird-lovers' collections, but they have all the qualities desirable among aviary birds, song excepted ; they are peaceable, gentle with their companions, and tame with their keepers. They only need a very little heat in winter, do not require very special food, and it is easy to rear them from the nest.

Here should be placed two families of birds from Tropical America, the Jacamars (*Galbulidæ*) and the Buccos (*Bucconidæ*). They inhabit forests, where I have often observed them, the former on low branches or the telephone wires passing through thickets, the latter among the

tree tops. They are purely insectivorous and nest in holes which they dig in sloping banks. They have very small feet. The Jacamars are splendid; they are like Bee-eaters, but have stronger, straighter beaks. Most of the species are golden green, silky and metallic, really beautiful, and the under parts bright rust colour.

The Buccos are more thick set, have thicker and shorter beaks strongly hooked at the end, and their colouring varies from brown to grey, more or less marked with black, white, and red. In shape they rather remind one of certain Barbets.

I caught several of these different birds in Guiana and Venezuela, but could never accustom them to cage life. They have not yet reached Europe alive.

AFRICAN GLOSSY STARLINGS

By Dr. E. HOPKINSON, C.M.G., D.S.O.

The recent introduction to Aviculture of two new Glossy Starlings—and strikingly handsome species too—in two consecutive years (1923, 1924) is a noteworthy event, especially as one of them has been bred.

Neunzig, in his invaluable work *Die Fremdländische Stubenvogel* (which is largely drawn on below), describes 15 species as having been kept in captivity. Interest in these two new additions, together with the timely arrival of the April Magazine and Mr. Seth-Smith's full account of the Crystal Palace Show therein and its "fine class of Glossy Starlings of ten entries" (p. 110), has led me to tabulate the records of those species which have been imported and kept, as far as I know them. The result, which follows, may interest others and bring to light other species which ought also to be included. Our Zoo, I feel pretty sure, has had others, of which I know nothing. The total number I can now bring up to 19, or 20 or more if *burchelli* is separate and if sub-species are counted separately.

1. LONG-TAILED GLOSSY STARLING (*Lamprolornis caudatus* Müller).
Nzig., p. 498.

The commonest of the imported Long-tailed Glossy Starlings. According to Neunzig its first arrival was to the Amsterdam Zoo



1/4

CUBAN TROGON
(*Prionotellus temnurus*)

SPOTTED-BILLED TOUCANET
(*Selenidera maculirostris*)

BLUE-THROATED BARBET
(*Cyanops asiatica*)

SENEGAL TURACOU
(*Turacus persa*)

GREEN-BILLED TOUCAN
(*Ramphastos discolorus*)

GOLDEN-BACKED WOODPECKER
(*Brachypternus aurantius*)

in 1863. They are common Gambia birds—I have brought one or two home—and one or more is generally to be seen at the Zoo from some part of West Africa; at Shows too they are (or perhaps were) not uncommon. Russ (ii, p. 520) gives a full account of this species, as also does Dr. Butler (ii, 37).

2. BENGUELA LONG-TAILED GLOSSY STARLING (*Lamprotornis purpureus* Boc.). *Nzig.*, p. 498.

Neunzig writes: "very rarely imported, but the species was in the collections of Messrs. Wiener and Linden. It is said to have been bred." Russ (ii, 520) also mentions it.

3. MEVES' LONG-TAILED GLOSSY STARLING (*Lamprotornis mevesi* Wahlberg). *Nzig.*, p. 498.

Neunzig mentions two instances of its having been kept, "once in the Amsterdam Zoo, then in 1915 at the Berlin Zoo." Other references are Russ, ii, 521 and AGB., ii, 38. The species occurs in S.W. and S.E. Africa. (*Nzig.*)

4. PURPLE-BACKED LONG-TAILED GLOSSY STARLING (*Lamprotornis purpuropterus* Rüppell). *Nzig.*, p. 499.

A shorter-tailed bird than the typical *caudatus*; N.E. and East Africa is its habitat. Neunzig notes it as having been in the old Berlin Aquarium and in the Berlin Zoo. Russ and Butler also include this species.

5. RED-WINGED STARLING (*Amydrus morio* Linn.). *Nzig.*, p. 499.

A common bird in South Africa—blue-black, with a metallic gloss and a red-brown wing-patch. "Seldom imported, *teste* Neunzig, but it was in the Berlin Zoo in 1913." I am also almost sure I have seen it at the London Zoo, and quite recently one was exhibited at the Crystal Palace Show, February, 1925. (See A.M., 1925, p. 110.)

6. SHARP-TAILED GLOSSY STARLING (*Heteropsar acuticaudus* Bocage). *Nzig.*, p. 499.

A S.W. African Starling. The old Berlin Aquarium at one time possessed the species, according to Neunzig.

7. GREEN GLOSSY STARLING (*Lamprocolius chalybeus* H. & E.), N.E. Africa and (*L. ch. hartlaubi* Neum.) West Africa (Senegambia). *Nzig.*, p. 500.

Neunzig (under *Chalybeus*) says: "One of the most commonly imported Glossy Starlings. It first reached Europe (the Amsterdam Zoo) in 1866, and in 1872 was bred at the London Zoo." Butler (AGB., ii, 36) confirms this. A more recent success (or possible success) is referred to in *Bird Notes* (viii, 137), where the Editor, Mr. Page, writes, "... Mr. Bush informs me that this species has bred freely in his aviary and that he was surprised to find the nestling plumage glossy ... We hope to give a detailed account in our next ... " No such account appeared, so whether there was real success or not must remain uncertain.

All accounts must almost certainly refer to the West African race (*hartlaubi*), as they were very much more likely to be imported than East African species; at any rate this was the case at the date to which these records refer, though nowadays we receive almost as many birds from East as from West, at any rate as regards Starlings.

Hartlaubi is quite a common Gambian bird, the larger of our two Green Starlings; I have had live ones from time to time.

8. GREEN-WINGED GLOSSY STARLING (*Lamprocolius chloropterus* Sw.). *Nzig.*, p. 501.

This is another Common Gambia Starling, and if it, as I believe, is the smaller of our two green birds, it is much the commoner species here, but according to Neunzig "it is only rarely imported and that usually for zoological collections only".

9. NORDMANN'S GLOSSY STARLING (*Lamprocolius chalcurus* Nordm.). *Nzig.*, p. 501.

About the same size as No. 8, except that the two centre tail-feathers are violet red with sheeny blue ends. It ranges from Senegambia to the Upper White Nile, "and has been procured near Bathurst (Rendall)." Shelley, *B. of Africa*. I do not know it in Gambia. Neunzig says, "has been in the collections of various aviculturists at different times, and in 1872 was bred at the Berlin Aquarium, making a large nest in a hole, a mass of straw, hay, moss, and feathers, which was

built by both sexes . . . ; 3-4 eggs were laid which were incubated for 14 days, and the young left the nest when from 4 to 5 weeks old." He adds, " they are fond of cherries." This must be the " Schillernder Glanz-Star " of Russ's List of birds which have been bred.

10. PETERS' GLOSSY STARLING (*Lamprocolius sycobius* Hartl.).
Nzig., p. 500.

An East African species, which has been occasionally imported, first by Fraulein Hagenbeck. (*Nzig.*)

11. PURPLE GLOSSY STARLING (*Lamprocolius purpureus* Müller).

Range.—West Africa: Senegambia to the Niger, and eastward through Equatorial Africa (Shelley).

This I take to be the larger and bluer of our three Gambian short-tailed Glossy Starlings. They are not so common as the two greener ones, but resemble them in habits, except that perhaps they are rather fonder of trees and less on the ground than these are. Neunzig does not mention *purpureus* (unless under another name. Query: is it the same as *chalcurus*, No. 9 here ?), but according to Russ the species was bred in the London Zoo, and Wiener says that young were *hatched* there in 1871 and 1874. Butler (AGB., ii, 35), however, says that he can find no record of the occurrence in the *Proceedings*. Wiener may have been referring to the breeding of the Green Glossy Starling at the Zoo.

12. PURPLE-HEADED GLOSSY STARLING (*Lamprocolius purpureiceps* Verr.). *Nzig.*, p. 499.

"Southern West Africa, Cameroon, etc. . . . Rarely imported, but both Russ and Linden had the species." (*Nzig.*) At the Crystal Palace Show, February, 1925, one was exhibited. (Seth-Smith, A.M., 1925, p. 110.) A BURCHELL'S GLOSSY STARLING was also at the same show (l.c.). A South African species presumably, from the name, which may be the same as the next. At this distance from books I cannot say, and must leave it for others to say.¹

[¹ *Lamprocolius australis* is the species known as Burchell's Glossy Starling.—ED.]

13. RED-SHOULDERED GLOSSY STARLING (*Lamprocolius phænicopterus* Sw.). *Nzig.*, p. 501.

A South African species which, according to Neunzig, was in the London Zoo in 1906 ; I think I have seen it there since also.

14. SPLENDID GLOSSY STARLING (*Lamprocolius splendidus* Vieill.). *Nzig.*, p. 501.

A truly splendid bird of West Africa (Senegal to Togo), which is unfortunately becoming very rare owing mainly, I am afraid, "to the bloody and unceasing pursuit of native skin-hunters, and unless precautions are taken it will soon be extinct ; it is no longer found in Casamance, where formerly it was common, but in Fouta Jallon and in Upper Guinea, where hunters are so far absent, it is to be met with in largish parties. . . . They do badly in captivity. The selling price of a skin is from 2 to 3·50 fr."

This I quote from a most useful little work on the fauna of that part of French West Africa near the Gambia, which appeared in 1906 ;¹ perhaps we may hope that the war, and the greater difficulty in obtaining powder since, may have helped the bird against the man. It certainly might appear to be the case in Gambia. I never saw one till last year, when I saw three, and again this year a few more at the same place in Niumi. Here apparently they have always been rare and only rainy season visitors to our seaward end, Kombo and Niumi. They are rather larger birds than the ordinary Green Starlings and, besides a particularly brilliant gloss with coppery as well as blue or green reflections in parts, their diagnostic character is a distinct bronzy ear-patch.

According to Neunzig, the species was in the Amsterdam Zoo in 1863, and later at those at Berlin and Frankfort, being wintered out of doors at the last place.

15. BEAUTIFUL SPREO (*Spreo pulcher*). *Nzig.*, p. 501.

Another West African bird which occurs in the Gambia, where they are fairly common in Niumi and Kombo from about May onwards, coming here, I presume, to breed. I have two alive now (May, 1925),

¹ C. Maclaud. Notes sur les Mammifères et les Oiseaux de l'Afrique Occidentale. Paris, 1906.

which are thriving and which I hope to get home. They live chiefly on "white ant" and grasshoppers, which are easy to get in abundance here, but have taken to bread and biscuit, chopped meat and cheese, so ought to do. Like all Starlings they have become ridiculously tame in a very short time. They and a Green one all escaped the other day. The sight of the grasshopper tin and a few dead ones thrown into the cage was enough to get them all three back again inside ten minutes, and they are now in a larger cage with an almost fool-proof door.

Neunzig says, "rarely imported and only for Zoos."

16. HILDEBRANDT'S SPREO (*Spreo hildebrandti*).

A South African brighter edition of the West African *pulcher*. One (at least) I have seen at the Zoo. This one has lived for years in one of the aviaries in the Small Bird House, and is there still.

17. SUPERB SPREO (*Spreo superbus* Rüpp.).

A bird which merits its title just as much as does *splendidus*, perhaps more so. An East African bird, which first appeared in England in 1923, introduced by Mr. Ezra, who was also the first to breed them in an outdoor aviary in the following year. By this time they had become almost common and comparatively cheap, for a London dealer imported at least one large consignment. They were also bred at the Zoo and elsewhere in 1924. (See AVICULTURAL MAGAZINE, 1924, 168.)

18. ROYAL GLOSSY STARLING (*Cosmopsarus regius*).

A strikingly handsome, fairly long-tailed East African Starling, whose introduction to aviculture (1924) is another of Mr. Ezra's many "firsts". Of the few imported to Europe last year, three, I believe, reached his aviaries which, I hope, they still grace; and there is a pair, presented by him, at the London Zoo.

19. AMETHYST STARLING (*Pholidauges leucogaster* Gm.), West Africa; and (*P. l. verreauxi* Bocage), South Africa. *Nzig.*, p. 503.

Beautiful rather small Starlings with royal purple upper parts with an ever varying sheen and white lower. The first arrival in Europe was a male from the Gambia, which I brought home in 1906 and which lived three years in the Zoo. In 1921 or 1922 I brought home a female (a dull brown and white bird), and in 1923 or 1924 another male, both

to the Zoo. They are apparently hardy birds and quite easy to cater for.

About 1919 Hamlyn imported some of the South African race, and I think Gamage and others had some more later.

Of these 15 are included in Neunzig's book, 13 of which were at least mentioned by Dr. Russ (Nos. 1-4, 6-12, 14, 15), while 12 receive attention in Dr. Butler's book on *Foreign Cage Birds* (Nos. 1, 3, 4, 6, 7, 9, 11-15, 19).

CORRESPONDENCE

IMPORTED BABBLERS

SIR,—To the number of Babblers mentioned as having been kept in confinement in M. Delacour's interesting article in the April number (p. 87) can be added two West African *Crateropus*: the Broad-tailed Babbler, *Crateropus platycercus*, and Reinwardt's Babbler, *C. reinwardti*. Both are common Gambian birds. I have brought home the first at least twice, one pair of which lived at the Zoo for years and nested there, though I think without any eggs resulting, certainly no young. One *reinwardti* (out of several I have had) also reached home. They are among the easiest of Gambian birds to catch; as soon as you have got the first he (or she) will call others at once, and they do well for the journey home on biscuit soaked in milk as a staple food, to which they very soon take and seem to prefer to the more natural diet, white ants and ripe bush fruit, which one can get so easily out here, and which feeds practically any insect-eating bird one may get, but which, of course, is not available for the journey.

E. HOPKINSON.

PARROTS IN NEW YORK

SIR,—It might interest your readers to know that I have a little Ornate Lorikeet which has lived with me for ten years, during which time her main diet has been sunflower seed. I make particular mention of this fact because it seems generally believed that Lories should receive nothing but soft food. Experience, however, proved to me that my Lory and other birds which I keep have never been healthier than when

fed on the diet of sunflower seed. Several died of fits when on other diets, but I never lost a bird on account of this diet. Occasionally the Ornate Lorikeet is given little tit-bits of fruit, cake; soft dry bread, and raw scraped carrots, but always in very limited quantities. She is in the acme of health and perfection of plumage. There never was a tamer nor more affectionate little bird. She plays on the table while I am writing.

My collection of Parrots, Lories, and Parrakeets numbers about 150 birds, including some of the rarest specimens. I have 2 Ceram Lories, 1 Purple-cap Lory, 3 Black-cap Lories, 2 Dusky Lories, 3 Astoria Lories, 1 Cochin Lory. Last summer my Cochin Lories laid, but the eggs were clear. The hen sat for about a month and died two days after I took her eggs away, although she was apparently in good health.

I have also 1 Great Palm Cockatoo and 3 Gangas, besides several other Cockatoos.

In regard to their feeding, I wish to say that they are all fed alike and are allowed all the clean water they wish to drink. The attendant feeds them only upon sunflower seed, while they get tit-bits of fruit, cake, etc., from me or the members of the family.

I do not keep any of my birds in cages, except the Love Birds and Budgerigars; I have 5 Bourkes, 2 pairs of Golden-shoulders, 1 pair of Elegants, 1 pair of Many-coloured, and quite a number of other Australian Parrakeets. These are all in separate aviaries. Last December one pair of Golden-shoulders hatched two young, but they died of the severe cold when about a week old; they were in an outdoor aviary. The two pairs of Golden-shoulders which I have are both nesting now.

All the large Parrots and Conures are on stands which are portable and are placed about in the garden during the summer. Here on Long Island, New York, we cannot allow any bird full liberty, for they always come to grief within a short time.

All my birds are exceedingly tame and love to be touched and fondled. I have 2 Hyacinthine Macaws and 2 Glaucous Macaws that play and roll on the ground with us and the dogs in perfect confidence. I also have Keas which are exceedingly tame and very

playful, but I found them too active to be kept on a stand, and put them in a large pen in the garden where they are content.

LOUISE WASHINGTON.

BROOKLYN, N.Y.

May, 1925.

THE NESTING OF RUSS'S WEAVER

SIR,—Last year, about the end of November, a pair of Russ Weavers nested in my aviary. I had not discovered the fact until they had laid and had been hatching for some time. As I found them most interesting to watch, a few notes here may be found acceptable.

In a clump of twigs they selected from a number of old nests one particular one, and to the entrance of it added a small narrow tube. Not knowing anything of the nesting habits of these birds I at first took no notice of this, but a few days later, by the strange behaviour of the birds, it could clearly be seen that they were nesting.

Going up quietly to the nest I saw the hen slip out and fly to the other end of the aviary.

On observing them more closely I found that the hen did most of the incubation, the cock only taking his turn for a few minutes while she left for food.

When flying to or from the nest she always uttered a loud squalking noise, so that one could tell immediately she had left it. She had an extraordinary way of puffing out her feathers like a clucking Hen, and at the same time shuffling her wings up and down. All the time during the incubation the cock guarded the nest, and should any other bird come too close would immediately puff out his feathers in the same manner as the hen and chase it off.

Unfortunately, just at about the time the eggs should have hatched they were thrown out by another bird.

I examined the nest after they had left it, and found that it was much more strongly woven than any of their other nests and that there had been two eggs—blue in colour.

HARRY M. BORRIDGE.

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NOTES FROM RHODESIA

By SYDNEY PORTER

The following does not in any way pretend to be a scientific study of the bird-life of Rhodesia, but is rather a series of notes commenced on leaving England and kept as a kind of ornithological diary during a period of about eighteen months spent in the beautiful district by the Umsururu River, about twenty or more miles from Salisbury, where the writer stayed for health reasons.

One seldom hears of Rhodesia mentioned in connexion with matters ornithological, the reason why I cannot tell: possibly it is because it is a comparatively new country or on the other hand because there are no ornithologists there. To my mind it is of surpassing interest for the following reason: being situated about midway between the Tropical and Temperate regions its avifauna consists of species from both areas, making it particularly rich in bird-life.

The birds of Rhodesia, unlike the mammals, fortunately seem to hold their own against the advance of white civilization. The farmers, the majority of whom are well educated, in that respect differing from most of their congeners at home and whose geniality and hospitality make Rhodesia one of the most hospitable regions in the world to live—seem to recognize what an essential economic factor the bird-life is in keeping down the insect pests which destroy the crops. This applies especially to the larger birds, excepting the birds of prey, and there seems to be a sentimental feeling towards the smaller ones. The great enemy of these latter is the small boy with the shot gun, who kills for the sake of killing, making no discrimination.

Waxbills, Zosterops, Sunbirds, and Warblers, etc., fall alike, to be picked up and thrown away. No doubt as they grow older they tire of this disgusting sport, if it is sport, and recognize the birds as the friends of mankind.

The natives, too, take a heavy toll of the bird life, robbing systematically nests of young birds for the pot, and nothing seems to come amiss to them, from Finches to Ostriches. Fat young nestlings rank with flying ants, locusts, and hairy caterpillars as being the "bon bouche" of the Kaffir table!

These notes were begun after sighting land for the first time after leaving England, off the coast of Spain, where small flocks of those wonderful little birds the Storm Petrels (*Procellaria pelagica*), whose tiny wings never seem to tire all day long, followed in the wake of the ship, never for a moment resting, their wings just seeming to skim the surface of the water as they made their zigzag flight over the ocean. Why they follow the ships I could never tell, for not once did I observe them feed upon the refuse that was cast overboard.

When about a thousand miles from land another ocean wanderer seemed to loom up from nowhere, that well-known bird the Wandering Albatross (*Diomedea melanophrys*); at first only one was seen, then two, three, four, until there were perhaps eight or more. A creature more graceful in the air could hardly be imagined—but on land it is as ungainly as the Swan—with outspread motionless wings these birds will follow the ship for days, sometimes coming so close that they can be touched with the hand, their sharp eyes ever on the alert. How and where they rest seems to be a mystery: the only time they settle on the water is when they feed upon the scraps thrown overboard, and then it is only a matter of a few seconds. Usually their plumage is spotless, looking very different from the poor mangled specimens one sees in museums. The food of this Albatross consists mainly of the squid, octopus, and any variety of marine creatures, augmented by carrion and garbage from ships.

When about five hundred miles from the coast of West Africa we had a surprise visit from a Grey Wagtail and a Dove: what species the latter was I do not know for sure, but I believe it was some species allied to the Scaly-winged Dove. How these two birds came to be

right out in the ocean is a mystery. They only remained a few days and then disappeared.

Soon after the Albatross came a pair of Southern Skuas (*Stercorarius antarcticus*) put in their appearance. These birds superficially resemble large brown Hawks, and seem equally at home on the wing as does the Albatross. When many miles from the African coast the Southern Skuas were joined by a pair of Richardson's Skuas (*Stercorarius crepidatus*). These birds are slightly smaller than the former, and have the two central tail-feathers long and pointed. Both these and the Southern Skuas live principally by robbing the other sea-birds of their lawful prey, though they also feed upon garbage and carrion.

Small parties of from about six to twelve Cape Cormorants (*Phalacrocorax capensis*) were seen flying at right-angles to the ship, apparently going out to sea for their day's fishing. These birds fly low over the water, and form a great contrast to the Cape Gannets (*Sula capensis*), which fly high over the waters, their snow-white plumage glistening in the sunlight, dropping every now and then with a great splash into the water, after having no doubt caught sight of some tempting morsel.

As the boat neared Cape Town our feathered attendants became more and more numerous, until as we sailed into Cape Town Harbour we were the centre of a screaming mass of sea-birds. Amongst the motley throng I noticed the pretty little Cape Pigeon (*Daption capensis*), which is a Petrel and bears no resemblance to any member of the Columbæ, the Southern Black-backed Gull (*Larus dominicanus*), and Hartlaub's Gull (*Larus hartlaubi*), which seems to be the Southern representative of the Black-headed Gull.

In and around Cape Town one observes many interesting birds. In the public gardens, which are situated in the centre of the town and which are a credit to the municipal authorities, one finds many birds. The commonest and the most familiar, both in the gardens and the city and its environs, is the Laughing Dove (*Turtur senegalensis*), a bird about the same size as the Bombay Dove but much more handsomely coloured superficially resembling the Common Turtle Dove. In any part where there are trees one is sure to hear their incessant coo. Many of these birds seem to have bred with the Cape Turtle

Dove (*Turtur capicola*), which is very common throughout the whole of South Africa, but in Cape Town it frequents the outskirts of the town and does not live in the town itself as does its smaller cousin. One sees many hybrids between these two, exhibiting a mixture of plumage of both birds.

Sometimes one sees at the docks a solitary specimen of the Jackass Penguin (*Spheniscus demersus*) quite at home amongst the ships and looking more like a miniature seal in the water than a bird. These birds breed on small islands on the West Coast, and are protected by the Government, but their eggs are collected every year and sold for edible purposes; it was not the breeding season at the Cape during my stay there, or I might have sampled them.

Underneath the pier at Cape Town are about half a dozen of these wretched birds, confined with several seals in semi-darkness, half-stunned and under most disgusting conditions. Amongst the crowd of birds that one sees on the slopes of Table Mountain are two which at once attract attention, namely the Cape Long-tailed Sugar Bird (*Promerops cafer*) and the Orange-breasted Sunbird (*Anthobaphes violacea*). The Sugar Bird, which has no relation to the Sugar Birds of South America but is allied to the Sunbirds, is classed in a family with one other closely allied species, the Natal Long-tailed Sugar Bird. It is a general dull greyish brown colour with the rump and tail-coverts olive yellow, the tail being extraordinarily long and graduated, the bird itself being about $5\frac{1}{2}$ inches long and the tail 11 to 14 inches. The hen is similar in colour but lacks the long tail.

These birds are confined to Cape Province, and are comparatively common on the slopes of Table Mountain, frequenting the scrub of protea bushes, aloes, etc., feeding on the juices of the flowers and upon various insects. I have seen them catching flying insects in the manner of a Flycatcher, taking up a position on the topmost twig of a bush and taking short upward flights into the air as an insect passed overhead; it is then that the bird is most conspicuous. It is said to play a great part in the fertilization of the various flowering shrubs which clothe the slopes of the world-famous mountain. The other bird, a tiny jewel, whose plumage may be described as follows: The head, neck, upper back, and throat rich metallic green; the upper breast

metallic purple ; the lower breast orange red ; the lower back and tail-coverts olive-yellow. The female is a drab brownish. The length of this tiny bird is 6 inches, of which the tail takes up 3. Like its near ally, the Sugar Bird, it frequents the shrub-covered mountain slopes, feeding on nectar and insects, but it is never very conspicuous owing to the fact that it lives in the denser bushes and thick undergrowth, hiding in the centres of the bushes as soon as it sees that it is being watched. They seem to live in small parties, no doubt comprising the old pair and their progeny.

The Cape White-Eye (*Zosterops capensis*) is very common in Cape Town and its environs. Always on the alert, so slim that it looks as though it could be passed through a finger ring, with little fear of man, searching in every nook and corner for the tiny insects upon which it feeds, even round the lamps in the principal streets. I once saw a White-Eye imprisoned in one, having got through a hole in the bottom and evidently not able to find its way out again. I couldn't do anything, but in passing several hours later it was gone. Out of the breeding season these birds are said to collect into small flocks, and when insects are scarce to feed upon juices of flowers, berries, and soft fruit.

The Cape Robin Chat (*Cassypa caffra*) is another familiar bird intermediate in size between the English Robin and the Thrush, and in demeanour it resembles both. The upper parts being olive-brown, the lower parts bright orange rufus, fading into slaty grey and dull white towards the centre of the abdomen. The tail is rufus, and there are two conspicuous eyebrow stripes of pure white.

It frequents the parks and gardens, spending most of its time under the bushes and round and about flower beds searching for insects, always on the alert and assuming the same confiding manner as our Robin at home.

The Red-winged Starling (*Amydrus morio*) which in no way resembles the bird of the same name in America, is fairly common, inhabiting the rocky coastal parts. I have never seen these birds very far inland at the Cape, but amongst the rocks and boulders, and they seem to seldom perch upon them.

In size it is rather larger than the English Blackbird, but has

the same manner of flight. In colour it is glossy purplish black, the inner webs of the flight feathers being chestnut red, so that it is only in flight that the colour is seen. The flight feathers seem to have a transparent tendency, for I have often noticed as the bird was flying overhead in the sunlight, the light shone through the feathers, making them appear a most beautiful orange red. The female is small and duller than her mate. These birds nest in crevices in the rocks and cliffs, making a nest of small sticks and grass, and laying four or five bluish green eggs.

The food of this Starling, in common with most other members of the Starling tribe, consists of insects, no doubt supplemented by wild fruit and berries. They are said to be a pest in the orchards in the fruit season.

The Pale-winged Starling (*Amydrus caffer*) is also sometimes seen, but is not nearly so common as the Red-wing. It is very similar in habit and appearance, but the inner webs of the flight feathers are a pale yellowish colour.

The Cape Wagtail (*Motacilla capensis*) is a very familiar little bird, seen everywhere in the gardens, parks, roadsides, and even in the streets, and especially on lawns searching for insects. In plumage it somewhat resembles a pale edition of the European Grey Wagtail.

The Cape Sparrow (*Passer arcuatus*), which is much darker and more distinctly marked than its European cousin, frequents the gardens and outlying districts of Cape Town, it differs also from *Passer domesticus* in lacking the bold and confiding demeanour of that bird. Its behaviour, too, is much more aristocratic, and it is nowhere common. It feeds upon the seeds of grasses and weeds, and no doubt supplements its diet with insects, especially during the breeding season.

The Fiscal Shrike (*Lanius collaris*) is an exceedingly common bird in Cape Province. In size about the same as the Common Shrike, its plumage is an arrangement of black and white, the upper parts black and the under parts white.

One always sees this bird in some conspicuous point of advantage. The top of a bush, or a post, or sometimes on the telegraph wires, always on the look-out for its prey, which consists mainly of insects, sometimes small birds and mice.

Its local name of Jack Hangman is no doubt derived from its practice of impaling its surplus food upon thorns, which is common to most of the Shrike family. It is a bird that courts attention, and even the most unobservant would not fail to notice it.

The Bacbakiri Shrike (*Laniarius gutturalis*) is a much rarer bird than the foregoing, and quite different in appearance, superficially resembling a Thrush than a Shrike. The upper parts are olive green, the head greyish, the throat bright orange red. Below this is a broad semi-circular black band which commences at the base of the beak, passing down the side of the neck and across the middle of the breast. The under parts are bright sulphur yellow. I have sometimes seen this bird around Cape Town, but more often in the bush bordering the rivers in Rhodesia, but I have never seen the Fiscal Shrike so far north.

Out on the lonely headlands around Cawe Town one occasionally sees the South African Kestrel (*Tinnunculus rupicolus*) behaving in exactly the same way as the European Kestrel, from which it differs but slightly, hovering high up in the air on the lookout for some unfortunate mammal or bird below.

The Cape Thrush (*Turdus olivaceus*) is a dark-looking bird, slaty olive above, the throat white, striped with black and rufous, the breast being dark olive going into orange rufous on the sides and lower abdomen.

This bird makes its home in the rich bush lands and gardens, and occasionally I have seen it in the public gardens at Cape Town, hunting under bushes and plants, in very much the same manner as the Black-bird, for insects. Although it is a fairly confiding bird, it does not like being watched, and will at once take shelter behind a plant if it sees one's eyes fixed upon it.

A very conspicuous bird around Cape Town is the Black and Yellow Weaver (*Pyromelana capensis*), a fairly large bird for a Weaver, and must not be confused with the commonly imported Black and Yellow Weavers, which are quite different. The size is accentuated by the fact that the bird puffs out its nuptial feathers, making it appear to be nearly twice its real size. The plumage is rich velvety black, except the lower back, which is brilliant yellow, the feathers being elongated, and the shoulder and lesser wing-coverts, which are yellow also. The

hens are the usual type, that is, a mixture of browns, but this one seems to have a very decided yellowish cast.

This very attractive little bird inhabits the marshy places and the banks of rivers, or in fact anywhere where the tall reeds grow. There it makes its nest, beautifully woven between two or more reed stems.

This lovely Weaver seems to be seldom imported into Great Britain, for I have never seen it or heard of it for sale. The food consists of grass and reed seeds, and also small insects.

The Rock Martin (*Ptyonoprogne fuligula*) a bird the size of a Swift, and of a drab brown colour, is often seen flying around the lonely promontories on the coast, always keeping around the rocks, and seldom indulging in aerial gymnastics like the Swallows or other members of the Martin family.

On the bush-veldt one notices a tiny brown Warbler-like bird with a long tail which is held at right angles to the body, constantly on the move, flitting from one grass stem to another. This is the Cape Wren Warbler (*Prinia maculosa*) which is fairly common in Cape Province.

On the Cape flats, a low-lying area of ground some miles outside Cape Town, where there are rank marshes and open pools, one sees the Common Heron (*Ardea cinerea*) motionless beside the water, sometimes knee-deep, waiting for its prey; sometimes I have seen an individual bird balancing on the wire fences, a difficult operation for a bird with such large feet.

On the wilder slopes and on the hills and cliffs, and very often near the artificially planted pine woods, is found the Ground Woodpecker (*Geocolaptes olivaceus*) a fairly large bird, olive brown in colour, striped with faint lines of white in the usual Woodpecker fashion, the stripes being more pronounced on the wings; the head is grey, the throat is white, edged with grey, and tipped with crimson. The rump is crimson too. The tail olive above and golden below, striped with white, the feathers are pointed and tipped with red. The breast is olive, tipped with crimson. The female is similar, but lacks the red about the head.

As its name implies, this bird is of terrestrial habits, associating in small parties and searching the rough rock-strewn ground for the insects upon which it feeds, using the long tongue to procure them from out of the crevices and fissures in the rocks.





D. Seth Smith.

Crowned Lapwing (*Stephanibyx coronatus*).

A handsome South African Plover of which several were recently imported.

To face p. 2171.

The colouring of this bird makes it a very conspicuous object, especially when flying, for then the brightly coloured rump is exposed to view. The flight is rapid, very heavy, and the bird usually flies just above the ground.

A bird that is fairly common in Cape Province is the Grey-headed Bush Shrike (*Laniarius starki*) which haunts the sparse covered bush lands and the scrub-covered hill sides. Outside Cape Town at Groot Schuer is a small collection of birds and mammals got together in the days of Rhodes, and it has apparently been dwindling ever since, the collection seldom being augmented by fresh additions. There are quite a few water-fowl living in a state of semi-freedom. Spur-winged Geese (*Plectropterus gambensis*), Knob-billed Duck (*Sarcidiornis melanonota*), White-faced Tree Duck (*Dendrocygna viduata*), Yellow-billed Duck (*Anas undulata*), also one or two Stanley Cranes (*Tetraptyx paradisea*), and Ostriches. In aviaries there are a few birds of prey, Weavers, and Waxbills. The collection hardly justifies the name of Zoo, as the local residents term it.

(To be continued.)

A NOTABLE COLLECTION OF SOUTH AFRICAN BIRDS

A collector employed by Messrs. A. W. Gamage, Limited, arrived in London on 20th July, with a wonderful collection of birds from South Africa, many of which are new to aviculture. They arrived in most perfect condition, most of them without a feather out of place, and very great credit is due to the collector for the great care with which he brought these birds home. The most striking of all were the Crimson-breasted Shrikes (*Laniarius atrococcineus*), with upper parts black and under parts vivid crimson; examples were first imported in 1923 (AVICULTURAL MAGAZINE, 1923, p. 247). Then there was the Bacbakiri Shrike (*L. gutturalis*), an olive-green bird with yellow throat, and the Greater Puff-backed Shrike (*Dryoscopus ferrugineus*) which is glossy black above with fluffy erectile feathers of orange-buff on the rump, the under parts being white tinged with rufous-buff; and the Long-tailed Shrike (*Urolestes melanoleucus*) with glossy black and white plumage and long tail.

The White-shouldered Robin Chats (*Cossypha humeralis*), of which there were several in the collection, is a very beautiful species, combining black, white, orange-red, and grey in its plumage. The Cape Robin Chat (*C. caffra*) also represented in the collection, has been previously imported several times.

The White-shouldered Bush Chat (*Thamnolæa cinnamomeiventris*) is glossy black above, the rump and upper and under tail-coverts chestnut; a whitish line separating the breast from the abdomen, which is chestnut-red. It is said to be a good songster. The Mountain Chat (*Saxicola monticola*) has the plumage brownish-black with the rump and upper tail-coverts white. The male goes through several stages of plumage, some old birds being entirely grey.

The Ground-scraper Thrush (*Turdus litsipsirupa*) and the Cape or Olivaceous Thrush (*T. olivaceus*) were both attractive species, as was also the Short-toed Rock Thrush (*Monticola brevipes*) with its slate-blue head and back, white eyebrow, and chestnut under parts and tail.

There were two very beautiful Plovers, Temminck's Courser (*Cursorius temmincki*) a smaller and richer-coloured bird than the Cream-coloured Courser, and the Crowned Lapwing (*Stephanibyx coronatus*) an exceedingly handsome species of which we publish an illustration.

There was a long-tailed Roller (*Coracias caudatus*) and a number of Red-vented Tit Babbblers (*Parisoma subcæruleum*) a very attractive little grey bird with a chestnut-red patch under the tail.

Of the three species of Sunbird in the collection, the Southern Bifasciated Sunbird (*Cinnyris mariquensis*) is apparently new to aviculture.

D. S-S.

THE TOUCANS

By J. DELACOUR

Toucans (Rhamphastidæ) are a very homogenous family of big birds from tropical America, characterized by an enormous beak, in some cases as large as the whole body, brightly coloured and very light; the tongue is a flattened blade. This beak gives the Toucan a very peculiar and somewhat deformed appearance, but its brilliant colouring, added to the equally gay ones of its plumage, always attract

attention. Toucans are entirely arboreal and inhabit forests, principally the tree-tops ; to see them fly past with their huge beaks cleaving the air is a curious spectacle which I have often witnessed in Guiana.

Toucans feed on fruits, large insects, and small vertebrate animals ; they nest in holes in large trees. In captivity they are more often met with in Zoological Gardens than in private collections, but they are very amusing and often exceedingly tame. I have owned a great many : their only drawback being their frightfully harsh voice. They thrive perfectly on boiled rice, boiled potato, bananas, and other fruit and insectivorous food, to which a little meat should be added. They succeed well in an outdoor aviary during the summer, but require heat through the winter.

The Toucans proper (*Rhamphastos*) are the largest of the family, the Toco being as large as a Crow and also having the biggest beak. They all have the upper parts of the body black with the subcaudal feathers and under parts white, yellow, or red. Ten species have been imported, and some are generally in stock among the dealers.

The Toco Toucan (*R. toco*), the largest of the genus, is black with a white throat, shading into yellow on the breast ; the upper tail-coverts are white, the under ones red ; the enormous beak and the bare skin round the eyes are reddish-yellow ; the base and point of the beak are black. It is a native of Guiana and the Argentine.

The Keel-billed Toucan (*R. piscivorus*) inhabits Central America and the South of Mexico. It is black like the preceding, white above the tail, and red underneath it, but the mark on the throat is larger and bright yellow, edged with red on the breast ; the skin of the face is light green and the beak the same except that the point and part of the upper mandible are red and the base has a black circle. It is not as large as the Toco.

The Short-billed Toucan (*R. brevicaratus*) found from Honduras to Colombia, is like the above save that its beak is smaller.

The Tocard Toucan (*R. tocard*), extending from Honduras to the Equator, has the same plumage as the preceding, but is larger and its large beak is black beneath and red above.

The Red-billed Toucan (*R. erythrorhynchus*), from Guiana, is black with yellow upper tail-coverts and red under ones, the throat and

upper breast pale yellow, edged with red at the bottom, the skin of the face and base of the lower mandible sky blue, the base and arc of the upper mandible yellow, and the rest vinous red.

Cuvier's Toucan (*R. cuvieri*) found from Colombia to Peru, has that part of its beak black which is red with *R. erythrorhynchus*.

The Culminated Toucan (*R. culminatus*), found from Venezuela to Bolivia, is a smaller edition of Cuvier's Toucan, but the base of its bill is green instead of white.

The next three species are the most freely imported, especially the Green-billed Toucan ; they have smaller bills and the bright colours are more widely diffused than with the preceding.

The Ariel Toucan (*R. ariel*) is black with tail-coverts and lower breast carmine red ; the throat and upper breast are deep golden yellow, bordered with light yellow ; the beak is black, its base yellow edged with black ; the skin of the face bright rose colour. It is found in the east of Brazil.

The Sulphur and White-breasted Toucan (*R. vitellinus*), ranging from Venezuela to Brazil, has much white on the top and sides of the throat ; the skin of the face and base of the beak also are white. Otherwise it resembles the above.

The Green-billed Toucan (*R. discolorus*), from South-East Brazil and Paraguay, is the most popular of the genus ; it is very much like the Ariel Toucan, but has more red on the under parts ; its bill is yellowish-green with a black band at the base.

Very pretty little Toucans have been fairly often imported : olive-green above, old gold to yellow underneath and on the head and neck ; the upper tail-coverts red, as are also the skin of the face and sides of the bill near the base, surrounded with bluish grey, the rest of the bill being yellowish green. This is Baillon's Toucan (*Andigena bailloni*) from South-East Brazil.

The Aracaris (*Pteroglossus*) are small or medium-sized Toucans, with long bills not so high as those of *Rhamphastos*, curved and having marked notches in the upper mandible.

The Black-necked Aracari (*P. aracari*), from Guiana and East Brazil, has a black head and neck, the upper back wings and tail dark green, yellow underneath, with a red band on the lower breast ;

the lower back also is red ; its bill is black, but the sides of the upper mandible are dull yellow, as is also an edging near the face.

The Collared Aracari (*P. torquatus*), native of Colombia, differs from the above by its breast and abdomen being yellow barred and marked with red and black, and its beak which is black beneath and along the culmen, yellow shaded red on the sides.

The Lettered Aracari (*P. inscriptus*), from North-East Brazil, is smaller and distinguished from the preceding by its clear yellow breast and abdomen, and its yellow bill, black along the culmen at the base and point, with spots of the same along the sides of the upper mandible. There are a great many more kinds of Aracaris which closely resemble those just described ; some may have been imported, but it is not possible to assert it positively.

The Toucanets (*Selenidera*) are small Toucans with proportionately smaller bills ; they are all almost alike except in the colouring of their bills. Unlike the other Toucans the sexes are different in plumage.

The Spotted-billed Toucanet (*S. maculirostris*) is freely imported. The male has dark olive green back and wings ; tail of the same colour tipped with chestnut ; the head, neck, and all the breast are black with the exception of the cheeks, which are orange-yellow, and a clear yellow spot which lengthens them ; the dark green of the back is separated from the black of the neck by a yellow band ; orange sides, yellowish green abdomen. The bare skin on the face is green, the bill grey, with the culmen and point green spotted black. The female has those parts chestnut which are black in the male. This species does well in confinement and has nested in a log but failed to rear young.

The Green Toucans (*Aulacorhamphus*) are usually fairly small ; they have grass-green plumage more or less tinted with blue, chestnut, or pale grey. Two species have been imported which live well in an inside aviary : *A. sulcatus* from Venezuela, where I captured it, which has a black and red bill ; and *A. prasinus* from Mexico, which has the tail tipped with chestnut, this being also the colour of the under tail-coverts and the base of the abdomen ; its yellow and black bill is exactly like a ripe banana.

THE BARBETS

By J. DELACOUR

Barbets as a family rather remind one of Toucans ; but though their beaks are thick and strong they have nothing whatever in common with the enormous appendages of the latter ; like them, however, they have short wings and bright colouring ; their tails are often short and they are fairly small ; the smallest are the size of a Goldfinch and the biggest that of a Jay.

They are arboreal and are usually seen on the tree-tops, uttering their monotonous and often repeated call. They nest and shelter in holes in the trees. Certain species are to be met with in trees in gardens and streets of towns ; the little Red-fronted Barbet (*Xantholæma*), for instance, is very common in Saïgon. On the contrary others are purely forest birds.

Their food is a mixture of insects and fruits ; according to the species they are more or less insectivorous or frugivorous. The Asiatic species eat chiefly fruit, the Americans are, on the contrary, extremely insectivorous, and the Africans come midway between the two. Barbets are to be found in the tropics of all three continents and the islands of Souda and the Philippines.

Barbets live very well in cages or indoor aviaries, but I have not found them do well in the open air ; they are very easy to manage under cover, and I myself own a Giant Barbet which has been more than six years in confinement. Their bright colours and their tameness make them very pleasant to keep, and they should be given insectivorous mixture, fruits, boiled rice and insects.

About twenty species have been imported, and as they are easy to keep alive no doubt many others will be imported some day.

The Collared Barbet (*Lybius torquatus*) inhabits South Africa, and two or three specimens have turned up of late years. I had one, which proved easy to keep. About the size of a small Thrush, it is olive-green above, the wings and tail variegated with yellow ; the head and throat are bright red ; the nape and chest black ; the under parts are yellow. The rather hooked beak is black.

The Pied Barbet (*Tricholæma leucomelan*), from the same parts,

was imported with the preceding, and I have had several. It is small ; the upper part of the body is black, spotted and streaked with yellow, except the shoulders, which are marked with white ; the under parts are white ; the head is black, with large pale yellow eyebrows, white moustaches, and red forehead ; the beak is black.

The Giant Barbet (*Megalæma virens*) is a native of Upper Burmah and South China, and a very closely allied species (*M. marshallorum*) inhabits the Himalayas ; the first-named has a dark green head, the other a violet blue one ; both kinds have the breast, the middle of the back, and wings brown, the flight feathers and tail green ; red under the tail ; a yellow crescent on the upper part of the back ; the under part of the body striped yellow and brown, with the middle bluish green ; the yellowish green beak is very large. This is the largest of the Barbets ; it lives very well in confinement.

The Blue-throated Barbet (*Cyanops asiatica*) is most frequently imported and can easily be obtained ; it inhabits the Himalayas ; its body is bright green ; its head light blue, having the crown and two little spots on the sides of its neck a beautiful carmine red ; the mark on the head is cut by a black band, which is prolonged above the eyebrows ; its beak is horn-coloured. It is a medium-sized bird.

A great many kinds closely resemble the Blue-throated Barbet, the only differences being their size and colouring of the head and neck. I believe two species have been imported : *C. franklini* from the Eastern Himalayas has black, yellow, red, and grey marks on the head, and *C. flavifrons* from Ceylon (whence I brought three specimens), which has the under parts slightly watered dark green on light green, the throat and cheeks blue, the upper part of the head and the moustaches yellow.

The Grey-headed Barbets (*Thereiceryix*) are rather large. They have green plumage, with the head, neck, and breast grey streaked with buff. Their rather long beaks vary from yellow to flesh pink. They are very common in their native country.

Three species have been imported :—*T. zeylonicus*, from India and Ceylon, has a yellow beak and a fairly dark head. *T. viridis*, from Southern India, is smaller with a black beak, a light breast, and the top of the head dark. *T. lineatus*, from Indo-China, has a rosy-grey

beak, head and neck pale tawny, each feather bordered with dark grey. They live well in confinement.

The Red-fronted Barbet (*Xantholæma nœmatocephala*), widely spread throughout tropical Asia, Sumatra, and the Philippines, is a pretty little bird, green above; the top of its head is bright red; this red cap and the cheeks are outlined with a black line which also passes through the eye delimitating two yellow spots above and below; its throat is yellow, its breast red, edged below with yellow; the under parts of the body is yellowish streaked with green.

Le Vaillant's Barbet (*Trachyphonus cafer*), from South-East Africa, is occasionally imported. It is a largish grey-green bird with a weak recurved beak; it has a black crest, is spotted green and red except on the nape which, together with the neck, the upper breast and back, is black. The wings and tail are black marked with white; the lower back yellow and the under tail-feathers red; the lower breast is yellow, striped red; belly yellow. It lives well in a cage and is more insectivorous than the preceding.

The Pearl-spotted Barbet (*T. margaritatus*), from Senegambia and Abyssinia, has been rather frequently imported during the past few years; I owned the first two. Smaller than the preceding, it has a red beak; its head is black on top, yellow below; the nape is yellow spotted with black; the upper part of the back, wings, and tail are brown, spotted with white; the lower back is yellow; subcaudal feathers red; a necklace of black and red spots on the breast; lower parts yellow.

The Red-throated Barbet (*Capito niger*) is the only American species which has been brought alive to Europe. I brought back a male from Guiana in 1922; it is black and yellow with a red forehead and throat.

THE TROGONS

By J. DELACOUR

Trogons (Trogonidæ) are curious and splendid birds; with short wide beaks, long spatulate tails and tiny feet. They are adorned with the brightest colours and clothed with extremely delicate plumage. They inhabit thickets and I have often seen them there both in America

and Asia. They feed on insects and fruits. They are to be met with in the tropical parts of Asia, Africa, and America. In this last-named country they are most plentiful and also most beautiful, especially the Quetzal of Guatemala, clad in shining green mingled with carmine and having a very long tail. Most of the American and African species are blue or green above, red or yellow below; the Asiatic are more often brown above, red or yellow underneath; but all are magnificent. Unfortunately it is hard to accustom Trogons to confinement and they have always been very rare in our aviaries; only one species has been imported to my knowledge, which is the Cuban Trogon (*Prionotelus temnurus*), which has the crown of the head and neck blue and the under parts, as well as the breast, pale grey; the back and middle of the tail are a fine golden green; the wings are black and white as well as the lateral rectrices; the abdomen is bright pink; the tail of this bird is very curious, every feather being ended by two lateral horns.

This Trogon in confinement does well on insectivorous mixture, mealworms, and other insects and fruit; but care must be taken to eliminate everything tough, such as grape skins; otherwise it will suffer from intestinal obstruction. I kept two of these birds for several years.

A South African species (*Hapaloderma narina*) has been caged in the Transvaal.

HOW TO KEEP INSECTIVOROUS BIRDS IN PERFECT CONDITION

By the late P. F. M. GALLOWAY

(Continued from p. 153)

THE WILLOW WARBLER (*Phylloscopus trochilus*)

This little Warbler is about the commonest of all the summer migrants—it is common everywhere.

It has no particularly favourite haunt, it just settles down contented anywhere. On some open commons, nearly every 30 or 40 yards there is a Willow Warbler perched on the twigs of some bush, or on the top of a piece of furze, or on the boughs of some blackthorn snow-white with blossom.

The song is not of great compass, beginning with a high note and running down the scale, but is pleasing and quite in keeping with other familiar spring songs of birds.

The nest, which is domed, is built on the ground of dry grass and mosses in a piece of rough grass or under a small piece of bramble, or sometimes in a grassy bank beside a wood, in fact, in a variety of situations, but always on the ground and lined with feathers and generally speaking is fairly well concealed. The young, after their first moult are a much brighter colour than their parents, the breast especially being of a much yellower greenish tinge. A cage 18 inches long, 13 inches high, by 9 inches deep, will suit this bird well, with the usual perches placed as mentioned previously for other species. Foods should be the same, but no fruit or berries are required in their menu.

There is nothing very interesting in this species as a cage bird, both song and colour being poor rather as compared with others, but may be interesting where variety is sought after.

THE GARDEN WARBLER (*Sylvia hortensis*)

Why this bird is called the Garden Warbler I can never understand, for this species is not more addicted to gardens than any of the other Warblers.

The Garden Warbler can be found in a variety of places and seems satisfied with the rank growth of brambles outside a wood, on commons generally on the outskirts, in thick ragged hedgerows, in bushes beside streams, and numerous other situations.

This species is a good songster, but in my opinion not so fine as either the Blackcap or Nightingale, previously mentioned. Its song has a deep tone and several notes resembling some of the passages sung by the Blackbird.

As a rule, their nests are built like those of the Blackcap, but much firmer; the young are very much like their parents in colour, and are easily reared by hand.

The Garden Warbler often has two broods in the season; the second I have known just leave the nest as late as the first week in August.

They are fond of ripe fruit, such as raspberries, red currants, and cherries, also partial to elderberries and the red glassy or transparent

berries of the wild honeysuckle, which show in little bunches where the flower has fallen.

The cage for this bird should be the same as used for the Blackcap, and the feeding and treatment the same as for that species.

THE CHIFF-CHAFF (*Phylloscopus rufus*)

This is about the hardiest of all our spring migrants, arriving sometimes as early as the 17th March. I have known isolated instances where it has been heard and seen by the 28th February.

This hardy little migrant will sit on a bough with the rough, chilly wind and stormy weather rocking him backwards and forwards, and in spite of all this he will sing his well known notes of "chiff, chaff". Although it is cold, we can say with truth that spring is here. The dog's mercury is unfolding its leaves in the wood, the bluebells have poked their noses out of decayed leaves on the ground, the white-thorn is trying to burst into bright delicate green, and many signs of out-of-door life begin to show, that although it is cold we have slipped away from the dark, dreary days of November and December. The catkins on the hazel, the palm-trees, the first hibernating brimstone butterfly flits past you; they all tell you that the spring is here, and the best time of the year is close at hand.

Our little harbinger of spring seems to have been in a hurry to get here and overshot the mark, but in a very short time a finer type of weather will follow him, although it may be a short spell; the little Chiff-chaff seldom appears to make a mistake. This bird is fairly distributed over the country, but although it is common, it is not so plentiful as the Willow Warbler. The nest is again a domed one, but is not built upon the ground like that of the Willow Warbler or Wood Wren, but is placed more often than not in brambles, sometimes in the middle of a wood, sometimes just in a corner of the wood, and generally from one to two feet off the ground. It is rather a larger nest than either the Willow or Wood Warbler's, and built of dead grass, moss, and often a fair quantity of dead leaves, and thickly lined with feathers.

I seldom see young Chiff-chaffs out of the nest until quite the end of June, and although it is possible that an earlier nest has been built

and destroyed, yet I am inclined to think, although this bird is such an early visitor to this country, it does not nest so early as one would imagine. Often, two broods are reared in the season, the second sometimes not being out of the nest until early August.

This bird's familiar song is uttered all through the season until the moult begins, then it is silent ; but after the moult, sometimes far into September, it is again heard, even up to the second week in October, when he sings " adieu ", for he will suddenly depart, and about the time he is missed the Redwing from the North has taken his place—the trees are rapidly turning colour—the end of the season is here.

If this species is kept a cage as recommended for the Willow Wren will do. The feeding exactly the same as for that bird. It is a hardy bird and will stand a wonderful amount of cold. I once saw one on the 15th of December, after a severe black frost, trying to find food on a blackberry bramble, and no doubt it perished through hunger.

THE WRYNECK (*Iynx torquilla*)

The Wryneck is an interesting bird ; although not brightly coloured the markings of various shades of browns, greys, and black are beautifully arranged. It is a good size, being much larger than the Nightingale.

The upper parts, including the crown of the head, are of a mottled grey and brown ; on the nape of the neck in the centre, a narrow dark brown streak occurs which widens as it reaches the back and is about three quarters of an inch in the widest part, the rump and upper tail-coverts speckled grey and brown ; on the shoulder is a band of very dark brackish brown tipped with greyish white. The throat and upper breast is pale orange buff, becoming paler on the belly and under parts ; round the throat there are fine pencilled lines of brown, like half circles, and when the breast is reached these lines are replaced with fine arrow or V marks on the tips of the feathers and carried right down the flanks ; on the side of the face there is also a short brown slanting streak ; the flights are dark brown with more or less square spots of light chestnut brown on the outer edges. The tail-feathers rather broad, mottled grey with about four of more or less distinct bars of

dusky brown ; under tail-coverts buff with dusky arrow marks, like the breast.

The whole plumage being handsomely mottled puts one in mind of a weather beaten piece of the bark of a tree, this bird being very similar in its shades of browns and greys to the Nightjar. The hen is a trifle smaller, and the dark brown mark in the centre of the back is neither so long or broad as in the opposite sex. The bird is very early in its arrival ; I have heard it on several occasions by the 31st of March.

The songs of birds are often difficult to describe in writing. The notes resemble as near as possible " Qui, qui, kew, kew, kew, kew ", very much like the cry of the Kestrel but not so shrill. The tongue of this species is long and the feet have two toes in front and two behind, as in the Woodpeckers, but unlike the latter they do not climb the boles of trees, their tail not being stiff and pointed they would get no support. Some writers state that the Wryneck's food consists of ants and other insects ; personally, I am convinced they feed entirely on meadow ants, both red and black, and their eggs, and also feed their young entirely on these, so that in reality they are birds that do no good nor harm, as the ant is as harmless an insect as the earthworm.

This bird is sometimes called the Cuckoo's mate on account of its arriving about the same time as that bird, while it does nothing of the sort. It arrives a fortnight in advance of the Cuckoo, although we read of persons having heard the Cuckoo even in February. I know these early Cuckoos ; and the note that was heard was never produced from the throat of a Cuckoo at that time of the year, for this species arrives between the 12th and 14th of April, and in many seasons nearer the 18th.

The Wryneck, like the Woodpecker, builds no nest, but uses an existing hole in a tree. They will, however, bore into a decayed tree and make a very neat nesting-hole, but their beak being very much weaker than the Woodpecker's, the tree has to be a soft dead one. They will select sometimes a natural hole in an old pollard, but as a rule they are more often met with in fruit orchards, and the nesting hole is often an existing one in a cherry-tree.

Although this bird is an early visitor to this country, one would

imagine they would nest quite early. They would probably do so if it were not for the Starlings, who seize every hole they can find, therefore, they are compelled to wait until the latter have flown, which is often well into June. I have known the Wryneck not able to nest until early July, and sometimes have young in the nest only fit to fly by the 12th of August, grouse-shooting day. The eggs, from seven to ten in number, are pure white. The young are fed, as previously stated, on ants and their eggs, only these are licked up, not pecked up, by the parents. The tongue has a glutinous substance on the little barbs at the extreme point, and if you were to place fresh ant cocoons on a sheet of black paper in front of a tame Wryneck the tongue would be darted out so rapidly that the eggs would fly up to the beak as a needle would to a magnet.

Some years ago I found a hole in a cherry-tree so low that I could stand and look into it. It contained young Wrynecks, five in number, only about three days old. The eyes appeared not to be open and they were, of course, bald. I had not been at the hole a minute before I discovered that a swarm of bees were taking possession of the nest-hole. These young and the old birds would have all been stung to death before long, and as it was, when I got them out one of the youngsters had already been stung on the head and was wriggling about in agony and I had to destroy it. I had a terribly anxious time in getting them safely out, for every time I put my hand in a bee either wanted to go in or else come out, and I was quite half an hour getting them out of the hole. Sometimes I had to clear away altogether, especially when they came in massed formation. At last I got them safely, and I at once filled the entrance hole up tightly with mud. This I did so that the adults should not nest there again only to be killed. I got the four young nicely warm, and kept them in artificial heat, fed them on the natural food, ants' eggs, and they grew tremendously fast, feathered well, and when full grown were the largest and finest Wrynecks I have ever seen. I consider I saved their lives for certain.

The Wryneck has a peculiar habit of hissing at an intruder if he should look into the nest-hole when the bird is incubating. It will twist its neck round and round, raise its feathers on the head, and then

stretch out its neck to the full, slowly lower the head, and then suddenly make a spitting noise at you, from whence it gets the name of Snake-bird.

They become exceedingly tame in confinement, but must be hand-reared; an adult is useless, they never appear to become so tame as other adult birds. The cage for this species should be the size of that recommended for a Nightingale; the floor and perches should be kept scrupulously clean, or they suffer with foot trouble. A good layer of peat and sawdust mixed should be used. They are interesting birds as pets. They depart from this country at the very end of September.

THE BREEDING OF HYBRID QUEEN ALEXANDRA AND CRIMSON-WINGED PARRAKEETS

(Polytelis alexandræ × Ptistes erythropterus)

By the MARQUESS OF TAVISTOCK

My first attempt at breeding this cross was made in the summer of 1923. At that time I had no hen Alexandra Parrakeet, my only specimen being a cock, aviary bred in Australia. I had tried unsuccessfully to pair him with a Sulu Island King Parrakeet, but he would have nothing to do with her, and having a spare hen Crimson-wing, known to be a breeder, I thought I would see if he liked her any better. They soon took to one another, and the Crimson-wing laid four eggs in a "grandfather-clock" nest-box. Two young birds were hatched, but only survived for a few days. I have since found that this type of nest-box, while attractive enough to Parrakeets that object to the ordinary patterns, gives very poor results, anyhow in the open flight, and young seldom thrive in it.

In 1924, the Alexandra and Crimson-wing were occupied with mates of their own species, and the latter reared two young in part of a natural tree trunk which I gave her as a substitute for the unsatisfactory artificial nest. This year the two birds were again disengaged, and I provided them with the same tree trunk in which the Crimson-wing had been successful last season. When first introduced, the couple

did not seem very friendly, the Crimson-wing being the master, but after a time she began to affect a great timidity and coyness, even though the Alexandra was quite anxious to make advances. My belief is that the Crimson-wing really rather enjoys the thrashing and bullying she gets from a male of her own species, and finds the courtship of a polite and gentle suitor rather a slow business. Hence, if she has no real cause to fear her partner, she likes anyhow to pretend that he is a dreadful tyrant!

The Crimson-wing usually lays in April, but this season was a very late one, and May was well advanced before she began to take a serious interest in the log. In due course the squeaks of young birds were heard, and about the middle of July two hybrids emerged. In appearance they resembled the mother more closely than the father. They were quite as big as Crimson-wings of their age, but more slenderly built. The main colouring is green, of which two shades are noticeable on the wing. The lower edge of the wing is scarlet, the amount of red feathers being not noticeably less than in a pure-bred Crimson-wing. The thighs and most of the under-surface of the tail are pink, and the male had a trace of pink on the throat and some grey on the head, the rump also being grey. The tail is intermediate in shape between that of the two parents, less tapering than an Alexandra's, but longer and narrower than a Crimson-wing's. Unfortunately, the more brightly coloured bird was unexpectedly picked up dead early one morning. The survivor is a beautiful specimen, and now quite independent of her parents, but I fear that there is little doubt of her sex, and her plumage changes will be small and of little interest, whereas her brother, had he lived, should have developed into something truly gorgeous and original.

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BUDGERIGARS
(*Melopsittacus undulatus*)

MAUVE
YELLOW

GREY
WHITE
GREEN

BLUE
OLIVE

THE AVICULTURAL MAGAZINE

BEING THE JOURNAL OF
THE AVICULTURAL SOCIETY
FOR THE STUDY OF
FOREIGN & BRITISH BIRDS
IN FREEDOM & CAPTIVITY

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BUDGERIGAR BREEDING IN TOULOUSE

By J. BAILLY-MAITRE

[We are permitted to reproduce this extremely interesting article from *L'Oiseau*, the translation from the French having been most kindly undertaken by Miss Chawner.]

Everybody may know that Toulouse is the town of violets, but it is not yet so well known that it might also claim the name of Parrakeet Capital.

The industry of breeding Budgerigars—for it has really assumed the proportions of an industrial undertaking—was started about 1880 in this town.

Until then the rearing of Budgerigars was almost entirely carried on in Belgium, and our amateurs and dealers were dependent on certain Belgians who, like M. Gheure-Petit of Bineke, had undertaken the breeding of these birds on a large scale.

In Toulouse the industry started in the most modest fashion. The invasion of phylloxera, which since 1875 reached its height in the southern vineyards, had brought about pretty well everywhere the introduction of American vine stocks destined to replace the French vines. Among the nurserymen who devoted themselves to this new culture was a M. Bastide, who at the same time was so passionately fond of birds that he devoted all the spare time his business allowed him to leaving Toulouse and selling birds at the various fairs held in the vicinity. My childhood's memories are full of the delight experienced at every visit I paid to the caravan of Bastide the bird dealer. And then what a caravan! The immense carriage was so

arranged that in front of the part intended for the hawker's dwelling one side was completely covered by bird cages ; you had only to raise one panel and to let down another to see the most dazzling display of many-hued birds, fluttering and chirping among the copper and glass beads with which the interior was abundantly furnished.

Then one day the caravan did not come, and I heard that its proprietor had given up these journeys in order to devote himself altogether to rearing Parrakeets.

It was not until 1888 that I went for the first time to the Avenue Frizac in Toulouse to visit the establishment founded by the old hawker. I was absolutely amazed. How they were changed, those little cages which I used to see fastened to the side of the caravan ! In a huge quadrangle entirely enclosed by walls were on three sides two rows, one above the other, of spacious aviaries 4 metres by 6 metres in depth by 3 metres in height—forty-eight aviaries in all ! And peopled by such a crowd of Budgerigars ! Every aviary on the ground floor contained breeding pairs, from sixty to eighty couples ; in the upper storey young birds were placed in companies of from four to five hundred, so that I had in view more than 15,000 Budgerigars.

I remember that autumn had just begun and everyone in the establishment was busy separating the cocks and hens for the winter ; they were cleaning out the nest-boxes and the quantity of clear and unhatched eggs was so enormous that they were taken away by the wheelbarrow full. This detail will give some idea of the size of Bastide's establishment even as far back as 1888.

I revisited the Avenue Frizac many times and always found fresh enlargements ; three more "Parrucheries", at least as large as the first, were added to the one which I have just described.

A still greater surprise awaited me in 1913. Messrs. Bastide Brothers, who had succeeded their father, had lately constructed their "Jardin d'Acclimatation", a huge open-air rearing ground covering two and a half acres of ground, and containing 112 aviaries arranged in most attractive surroundings.

As already intimated, each one of Bastide's aviaries is 4 metres long by 6 deep and 2·90 or 3 metres high. Four metres of the

depth are covered and enclosed on three sides and serve as shelters ; the 2 metres in front are entirely covered with large meshed wire-netting, which prevents attacks by cats or other beasts of prey. The average population of Bastide's "Perrucheries" is between 80,000 and 100,000, and if one were to place the 290 aviaries end to end in a straight line one would have 1,200 metres of them. Therefore one must walk several kilometres in order to visit them in detail and observe the enormous number of birds which they contain.

To gain a real idea of the importance of such establishments one should see the seed store replenished. 600, 800, or even 1,000 sacks of millet are required every two or three months by the Bastides to feed their birds, and at present prices this quantity costs annually between 350,000 and 360,000 francs.

If one adds to these figures the expense of employing at least twenty people, and the interest on the enormous capital locked up in this enterprise, one can readily comprehend that it is necessary to rear and sell more and yet more Budgerigars if at the end of the year the undertaking is to show a satisfactory balance-sheet.

Though most industries suffered on account of the war it can safely be asserted that none lost more heavily than the Budgerigar breeding establishments of Toulouse. England, Germany, and Russia were their chief customers. Suddenly all these outlets were closed, and besides it was necessary to suppress all useless mouths. Consequently after August, 1914, the House of Bastide had to slaughter all the 120,000 Budgerigars in their aviaries at the declaration of war ; for five years their aviaries remained silent and empty, and though they are now as full as ever it is easy enough to understand what huge sums had to be spent after the war in order to regain a sufficient number of birds to start the business once more.

Blanchard's Ornithological Establishments, which own two very important rearing centres in Toulouse, are nearly as old as those of Bastide. They were founded, to be exact in 1886, and their yearly output to-day exceeds several tens of thousands of Budgerigars.

Nevertheless, while the Bastide breeding establishment confines itself at present to supplying the world's market with green or yellow Budgerigars, the rival house has of late years taken up the production of all the other colour varieties of this Parrakeet.

Although M. Blanchard is still a dealer who turns out myriads of Budgerigars, one can discern in him the amateur who is really interested in his birds.

The "Perrucheries Blanchard" actually rear hundreds of Blue Budgerigars, which were so intensely rare and only within the reach of a few privileged amateurs. Some of the aviaries in Blanchard's establishment are occupied only by Olive Budgerigars, a very distinct variety created by M. Blanchard himself. He also produces the jade and watered varieties, and is trying with all his might to evolve a pure white Budgerigar. No modification in the plumage of his strains escapes M. Blanchard, and by dint of methodical selection he has lately announced the creation of two new varieties, the lilac and the grey.

When one visits collections of Budgerigars as important as those of Blanchard one is struck by the numerous variations in the plumage of these birds. There are, we believe, few kinds of animals which having been for such a short time in the hands of man, have produced so many varieties. If one refers to the information supplied by Hervieux de Chanteloup in his "New Treatise on the Canary Finches" which was published in 1785, one can see that at that date the varieties of Canaries really fixed were not in any way superior to what we now find among Budgerigars; yet the Canary has been cage bred for not less than three centuries, while the Budgerigar is still a comparatively recent introduction.

It seems that the great variability which this little Parrakeet has displayed in so short a time must be attributed to certain favourable circumstances, and among others to the facility with which the species has acclimatized itself in every country to which it has been introduced, and its remarkable fertility, which has enabled it to breed in great numbers in confinement. When one remembers that change of climate, food, and style of living represent the essential factors of variation, one can understand how, removed from its original country, deprived of its natural food and subjected to a mode of life quite different to that which it enjoyed when free, the Budgerigar once it became acclimatized and, so to speak, domesticated, must obey the law of variation, of which all other domestic animals furnish examples. For



PURPLE-BELLIED PARROT
Triclaria cyanogaster (Viell.)

all that one could name plenty of other species which, although reared in captivity for many generations, have not yet given us any one of the individual modifications of which the Budgerigar is so lavish. But it must not be forgotten that variation only appears in very rare cases, and therefore it is necessary to produce a great many individuals to insure the likelihood of obtaining one which has some peculiarity which is capable of giving birth to a new variety. When one considers the enormous development in the breeding of this little Parrakeet since its importation and how it is intensively cultivated in confinement, one understands that it is most favourably placed in the required conditions to bring about the numerous varieties which we may observe in it to-day.

As is always noticed in similar cases the Budgerigar's plumage was unchanged for a long time after it became acclimatized, and for many years amateurs only knew the primitive green type, which they considered, and justly, to be a marvel. Nobody then thought of changing this beautiful bird's plumage. Beside, variation comes of itself, and it does not depend on the rearer's skill to bring it about. It was quite by chance that a Green Budgerigar one day produced a Yellow Budgerigar. It was probably raised first in Belgium between 1875 and 1880, and for some time it was so rare that French amateurs only knew of its existence by hearsay. In that very complete work which E. Leroy published in 1883 on the Budgerigar, and in the pamphlet by Alfred Rousse which appeared the following year on Parrakeets, this author—who appears never to have handled nor even seen the Yellow Budgerigar—only devotes a few brief lines to describing its chief characteristics, and mentions that it was obtained in the North.¹ When the variety perpetuated itself it was received with great favour, but not much surprise, because other green birds had sported yellow individuals in captivity.²

But on the contrary the creation of a Blue Budgerigar was received

¹ Alfred Rousse, *Perruches d'Australie et d'Amerique*, 1884, p. 70.

² It is well known that certain normally Green Parrots, i.e. *Chrysotis æsturis* and *Amazoinens* (among others) are fairly often yellow-crested, and I have now a Grey-headed Parrot (*Pæocephalus senegalensis*) with neck and wings thickly spotted with yellow instead of the uniform green. *Palæornis* species are also to be found either all yellow or yellow spotted, varieties which occur in the wild state.

with equal admiration and astonishment. A coloured plate, which was published in 1882 by "l'Acclimatation Illustrée" of Brussels, enables us to form an exact idea of the new coloured plumage in which this variety was first clad. The pair which are figured there differ little from the type which we see now among more or less azure blue specimens. The birds which served as models for this plate belonged to M. Limbosch of Uccle (Belgium), who preserved the strain with jealous care.

It was not until thirty years later, to our knowledge, that the Blue Budgerigar was introduced into France; and in any case it was not until February, 1911, that it was produced and publicly shown in Paris by Mme. Quentin de la Guérinière. (The first Blue Budgerigar displayed in the Natural History Museum was offered that year by Mme. de la Guérinière and presented to our colleagues of the Société d'Acclimatation at the sitting of the 4th December, 1911, by Professor Huessart.) It seems superfluous to say that they were considered exquisite, seeing that nowadays every amateur has the opportunity of admiring this variety. But, if they excited general admiration, the appearance of the Blue Budgerigar caused equally great astonishment to all who asked themselves how the primitive type was able to produce this new coloured plumage and change from green to blue.

If two Budgerigars, one Green and the other Blue, are examined, it will be observed that all those portions of the plumage (forehead, throat, and edges of the streaks) which are yellow in the first, are white in the second: consequently the Blue Budgerigar is the result of the complete elimination of the yellow colouring from the plumage of the original type, whose green parts are composed of a mixture of yellow and blue colouring elements.¹

Having these three varieties—green, yellow, and blue—the breeders of Budgerigars were in a position to create all the other varieties which they have made known to us to the present time, and the number is still increasing. All the intermediate colours between yellow and green have been obtained, and the gradation of tints between them

¹ In exceptional cases blue *Palæornis torquatus* and *nipalensis* have been met with.

is so slight that it has become very difficult to agree on the names by which to call these new varieties. Besides this, very often these shades are quite fugacious, and in many cases the moult brings them back to the type whence they were derived.

By dimming the green colour Olive Budgerigars have been produced, and this shade is now constant and very characteristic.

The great ambition of most Budgerigar breeders is to obtain a pure white variety. It is by means of the Blue Budgerigar that they try to secure a perfectly white one, and it must be allowed that some individuals approach pretty nearly to the desired type.

It has been noticed ever since it first appeared that the Blue Budgerigar has a wide range of colour between one individual and another; by the side of azure blue specimens there may be others of more or less washed-out tinge, and on the contrary others so intensely blue as to be quite cobalt. In our opinion this last shade reproduces in the highest degree the characteristic plumage of the Blue Budgerigar; but, unluckily, few amateurs have endeavoured to preserve this, and for the most part the palest specimens are selected with the object of obtaining the white form. By this means they have succeeded in producing some very colourless individuals, with whitish plumage, if not actually white, and which have none of the original pencilling on the upper part of the body, but the underneath is always more or less blue and the large quills of the wings and tail still betray their origin.¹ One may therefore doubt the likelihood of obtaining a white Budgerigar by selecting always the palest blues; dilution of colour is not change of colour; that can be fixed by selection in a few generations, but when one has to do with merely diluted colouring individuals will always revert more or less to their ancestral tint.

There is no reason to suppose that a white race of Budgerigars cannot be obtained, just as there are already yellow and blue ones; if it be admitted that it can be obtained through albinism.²

¹ In Mr. Astley's aviaries, which contain about fifty Green and Blue Budgerigars together with birds of all kinds, a white one has appeared at two different times. No special selection is carried out, and Yellows are hatched also from time to time.

² Perfect albinism is quite exceptional among Green Parrots and Parrakeets. The commonest form of colour change is "lutinism" either partial or complete. "Bluing" is also met with at times, though more rarely. Mr. Ezra has an

In the true White Budgerigar colouring matter will be altogether lacking, and in consequence its eye will be red or unpigmented ; but none such have yet been seen.

Still, a red-eyed form was obtained in Belgium more than forty years ago : it was figured on the coloured plate which we spoke of à propos of the Blue Budgerigar ; it is described under the name of the Golden Budgerigar, and has uniformly yellow plumage, without the least trace of pencilling on the upper parts of the body.

The colour of the pencilling has altered at the same time as the plumage in all varieties which have as yet appeared, and so as to harmonize with it. In the Greens the pencilling is very sharply drawn, plain black edged with yellow ; in the Olives the pencilling takes a bronze shade ; in the Jade the black marks amalgamate with the greenish yellow, the pencillings stands out less distinctly, and they scarcely show at all in the Yellows, where they may even be completely absent.

The pencilling of the Blue Budgerigar is grey ; fairly dark in the deep blue individuals, they become lighter according as the blue plumage fails and white spreads over the upper part of the body ; and they finish by shading into blue and even disappear where the colour is so diluted as to approach white. The modification of colour through which the pencilling of the Blue Budgerigar pass, allow of the realization of a very handsome form, with azure blue plumage on which the delicate pencillings of the same colour have a white background.

To this series of varieties, already so rich, which are known in the Budgerigar, we must add the Mauve and the Grey, which M. Blanchard has lately recorded.¹

Although they seem so strange and unexpected these two new varieties in the plumage of Budgerigars is not inexplicable. In fact, very complete study carried out on a certain number of animals, shows that modification of colour is determined by the nature and Alexandrine which is entirely blue and another which is all yellow. The Marquess of Tavistock has in his collection of Alexandrine Parrakeets some which are all yellow and Blossom-headed Parrakeets (*P. rosa*) with yellow spots. It has been observed that females are much more liable to lutanism than males. They breed freely, but up to the present have only produced green offspring.—N. D. L. R.

¹ These varieties appeared spontaneously some time later with Mme. Lecallier and Mrs. Dalton-Burgess.



RED-HEADED TITS



OYSTER-CATCHER

H.D. ASTLEY

constitution of the colouring agents belonging to each species. Each one of them bears the germ and possibility of future variation, so that no colour can appear or be developed if it is not already contained : it may be in combination or separate, in the fur or feather of the typical individual.

Thus it can be explained how the Green Budgerigar, the colour of whose plumage was made up of the fusion of the colouring elements yellow and blue, is able to give rise to the yellow variety by the disappearance of the blue colouring element on the one hand, and on the other to the yellow variety by the suppression of the yellow colouring matter. When we know that white results from the absence of colouring matter, we can understand that it may appear in certain parts of the Blue Budgerigar. We have also observed that the changes in the coloration of the pencilling are allied to the changes of colour in their edgings, and we have noted that, in the Blue Budgerigar, the grey of the pencilling appeared at the same time that the bordering has lost colour and become white. So the Grey Budgerigar could be produced through the spreading to other parts of the plumage which till then was localized in the pencilling of the Blue Budgerigar.

The arrival of the Lilac Budgerigar seems attributable to the same factor, for the typical Green Budgerigar reveals by a simple examination of its plumage the existence of a mauve colour element. For that matter I have always been surprised that all the authors who have described the species have fallen into the same mistake of describing the spot which adorns the cheeks of the Budgerigar as blue, it suffices to look with a little attention at this mark to realize that it is far more indigo, becoming more or less violet or mauve in the same degree as the general tint of the plumage draws towards blue or yellow.

As a finish to the diversities which are to be noticed in the Budgerigar, we may remark that, as a rule, the Yellows are the largest and the Olives the smallest.

THE LATE MR. HUBERT ASTLEY

Monsieur Delacour contributes an interesting article to *L'Oiseau* entitled "Brinsop Court, May, 1925". By the special request of the deceased the duty of sorting out the large and valuable collection of

birds, and dividing those which Mrs. Astley was not able to keep amongst our late President's avicultural friends, fell to the lot of M. Delacour. He describes the splendid collection, which to the last had been kept up to its high standard, as he found it. While several of the rarities have been given to friends, Mrs. Astley will retain the greater part of the collection and Brinsop Court will retain its present features, and the birds will still fill in the picture of the beautiful old mansion.

The following is quoted from M. Delacour's article:—

“During the thirty years that Mr. Astley kept birds very many extremely rare kinds lived in his aviaries; one of our plates gives a Blue-bellied Parrot (*Triclaria cyanogaster*) from South-East Brazil, an extremely rare bird, which lived many years in captivity and ended its days in the Zoological Gardens of London. Mr. Astley possessed many other Parrakeets, and was the first to breed the Queen Alexandra's (*Polytætis alexandræ*) and the Golden-shouldered Parrakeets (*Psephotus dissimilis*); he likewise bred Pileated Parrakeets (*Porphyrocephalus spurius*), Stanleys, Many-colours, etc. He owned a Lear's Macaw, a *Pachynus brachyurus*, a *Microglossus*, and Solitary Lories from Fiji, along with other rarities.

“His collection of Doves was very good, also that of the Waterfowl, of these he kept for seven years Cotton Teal (*Nettapus*), and was the only person to keep them alive so long. He had many waders, too, particularly *Agamia* and *Thinocorus*, and obtained hybrids between the Australian Ibis (*I. spinicollis*) and the Indian Black-headed Ibis (*I. melanocephala*). He always kept many Cranes, and a young Australian Crane was reared at Brinsop in 1924.

“His cages and aviaries were always well filled with Passeres, but only the rarest can be given here; various Birds of Paradise, Sugar-birds, and Humming-birds; the Australian Blue Wren, several kinds of Niltavas, Loo-Choo Robins, Red-headed Himalayan Tits, Yellow-headed Gouldian-Finches, Blue Drongos, Motmots, etc.

“He was the first in Europe to rear the Pink-breasted Grosbeak and Orange-headed Thrush, and in his aviaries Shamas, Blue Robins, American Robins, Crimson Finches, Cuban Colins, and others bred freely.

“ Mr. Astley made careful and exhaustive notes on all the birds which lived in his aviaries, and the pages of the AVICULTURAL MAGAZINE, where the greater number of his many articles are to be found, proudly preserve the history of this magnificent collection of living birds.”

SOME MARRIAGE RELATIONSHIPS

By the MARQUESS OF TAVISTOCK

Few aspects of bird life are more interesting to study than the “personal” element in the relationship between a male and female that have mated and also between parents and their young. The variation is amazing, not only in the conduct of birds of different orders, but in the conduct of species belonging to the same genus and even in the conduct of individuals of the same species. Careful study of the subject indicates that birds are far from being mere automata, influenced solely by heredity, instinct and environment.

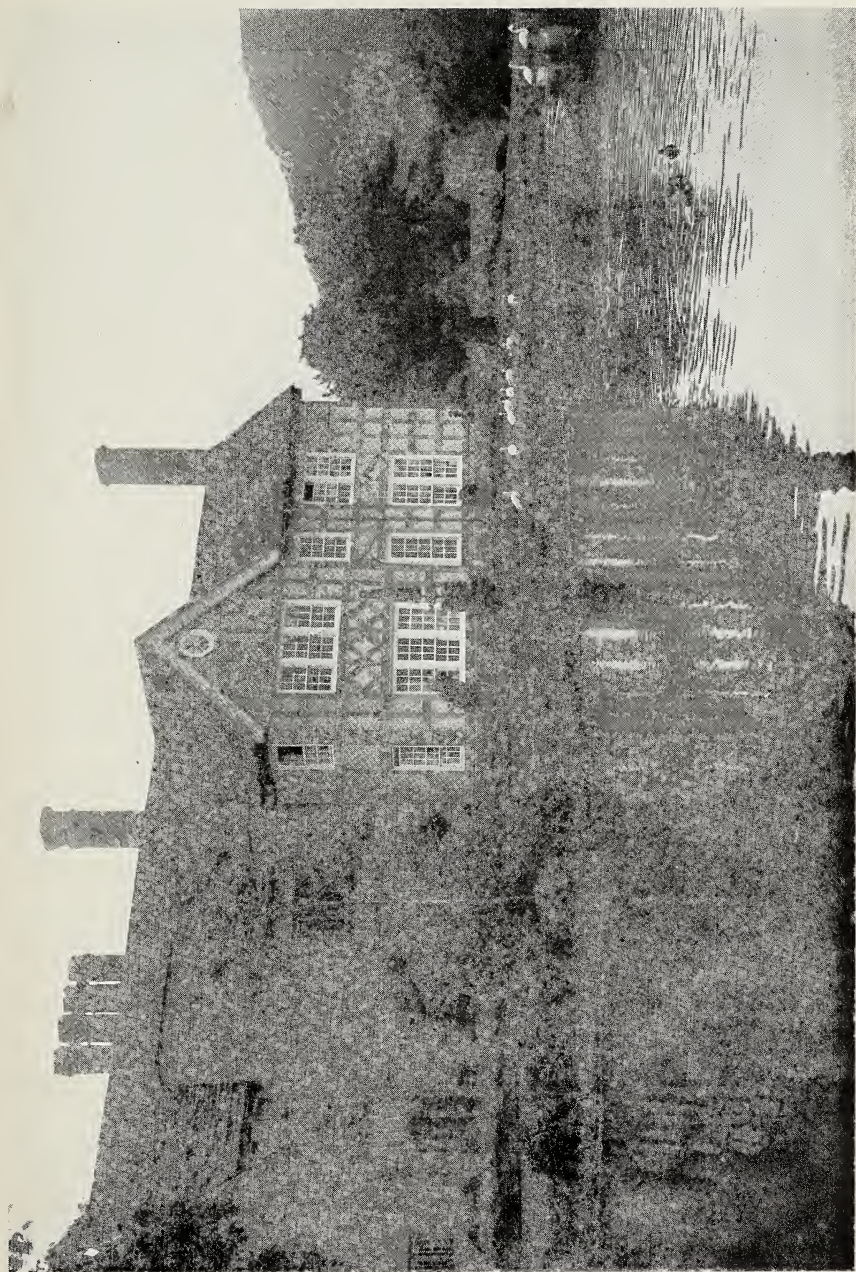
It is not a little remarkable that birds, although regarded by scientists as structurally very inferior to mammals, and although, like them, descended from a polygamous ancestry, should in so many cases have evolved a pure and strict monogamy which among mammals is so rare as to be almost unknown. With the exception of the American fox, no species of mammal is at present known with certainty to be very strictly monogamous and to pair for life. Even man, with all his boasted reason and moral sense and with science, religion, and civilization to help him, is still, *as a species*, struggling along somewhere about the level of the less reputable of the Ducks, having been badly beaten in the race towards an ideal sexual relationship by most of the Parrots, Cranes, and Swans. Even as a parent, the lord of creation has little to boast of. It is true that he is in the habit of treating his fully adult young with considerably more affection than is displayed, even in the best of bird circles, but there his superiority, as a species, ends. Take the percentage of Crane parents that are cruel and neglectful towards their immature young and compare it with the percentage of human parents—and where is man? Even if it be argued that man is far kinder than the birds in his treatment of the children of other members of his race, he is no better in this respect than the

cock Rhea and the domestic Gander, who are ready to adopt their neighbours' orphans. The varied marriage customs of the Parrot family are both interesting and amusing to observe. All Parrots are naturally monogamous, and the great majority pair for life, but while in some cases the hen is master of the establishment, in others the cock controls the movements of the pair.

I have comparatively little experience of the typical Parrots or of the Conures, but as far as my observations go male and female live throughout the year on terms of affectionate equality, fondling one another, playing with one another, and occasionally indulging in a mild squabble. The same holds good with the Lories and Lorikeets and most of the Cockatoos. The Black Cockatoos are somewhat different in their behaviour towards each other. Fondling is unknown among them, and the hen is always master. During the breeding season the cock feeds her, but at other times of year she is inclined to be selfish and short-tempered, clearing him unceremoniously out of her way, especially at meal-times, though not objecting to him sitting close to her when the pair are at rest. A strange male and female introduced for the first time take comparatively little interest in each other, and this indifference continues until the hen comes into breeding condition.

The different species of *Palæarnis* Parrakeets vary somewhat as regard the attitude of the sexes towards each other, but the ladies of the family, as a whole, display a most shrewish disposition towards their unhappy partners when not engaged in domestic duties and are both willing and able to kill them in a confined space. The exception is the Alexandrine Parrakeet, which is the mildest-tempered member of the whole genus. While not showing any marked attachment outside the breeding season, the sexes are usually quite good friends throughout the year; the same is true, but in a lesser degree, of the Plumhead; some hen Plumheads are quite kind to their husbands, others become little vixens with the advent of the moult.

A hen Ringneck, not in breeding condition, usually gives a strange cock a very unfriendly reception, and although she will not actually kill him in a large aviary, will take good care that he is not anywhere near her. In February her demeanour begins to undergo an amazing change, and the hen-pecked mate at once responds, showing, it always



BRINSOP COURT. — THE MOAT



seems to me, a most Christian spirit of forgiveness towards his late persecutor ! He squirms round her in his most attractive fashion, rocking himself backwards and forwards and kissing the back of her head, nibbling her toes and drawing her wing feathers through his beak—familiarities which a few weeks before it would have been as much as his life was worth to attempt ! The lady receives all these attentions with the greatest good humour and forbearance, and does not even bite him, as a Rosella hen would do, when he pesters her with offers of food after she has had enough. This happy state of affairs continues until the children have left the nest. The hen tires of her offspring some time before their father ceases to feed them. She starts to bite them when they come near her, and soon afterwards begins to treat her partner in the same way, though she seems not to dislike him *quite* so much as she did before they were first married. I find that when I give my cock Ringnecks their liberty they do not always return to their former mates when spring comes round, but are disposed to select fresh partners. I do not blame them in the least, and should do the same if I were afflicted with a wife having a disposition like that of a Ringneck hen ! It may be that in a wild state Ringnecks pair for the season only. A pair of Malabars in my collection seem pretty sociable throughout the year. The cock gives way to the hen, but on one occasion he lost his temper owing to her persistent refusal to go to nest, and in the rather serious scrimmage that ensued he came off victor.

I have not had much opportunity of observing the habits of pairs of Crimson-wings at liberty owing to the unfortunate penchant of this species for exploring chimneys which usually brings them to an untimely end.

All the cocks I have had in aviaries have believed in the maxim :

“ A woman, a dog, and a walnut-tree ;

The more you beat 'em the better they be ! ”

and have kept their wives in a state of strict, not to say intense subjection. They were also much addicted to promiscuous flirtations, and I should consider it doubtful if the Crimson-wing in his native land remains faithful to one partner for life. The cock Crimson-wing, on the whole, appears to more advantage as a father than as a husband. If his marriage be one of his own choice he will attend to the wants of

his family with much devotion, even restraining the natural inclination to bite his wife so long as there is a danger of disturbing the young family by the process. When his partner has been forced upon him by an unsympathetic owner and he has been too occupied with brooding over the charms of his neighbour's wives to be able to spare a thought for his own offspring, he will still receive them kindly when they make their appearance in the world, and will even show a like forbearance towards all other young birds of his own and allied species, over a period of several months.

The Crimson-wing's near ally, the King Parrakeet, believes in keeping his wife in her place, but he is faithful to her as long as both remain alive. A pair of Kings introduced at any time of year when not actually in moult will show excitement and pleasure, and take to one another, but if the hen is too forward in her advances she is likely to receive a sharp bite to remind her to behave with ladylike modesty, and it is often most amusing to see a hen who is fearfully taken with her suitor's appearance, trying to control herself sufficiently to avoid receiving a snub, painful both to her person and her mind!

In the case of Barraband's Parrakeet, it is the hen who is always master and who decides where the pair shall go when both are at liberty. The cock Barraband is most devoted to his mate once he has actually paired with her, and will never leave her. Both parents feed their young long after they have left the nest, and will usually give way at the feeding dish to other young birds not their own offspring as long as they show signs of obvious immaturity. Even unmated cocks and hens show the same forbearance towards youngsters.

Cock Barrabands, at any rate in some cases, show a remarkable recognition of each other's rights in matrimonial matters. Some years ago I had two cocks unmated, an old and a young one, the former being the master. When I obtained a hen I used to put her out on the verandah in her cage on fine days, the cocks being at liberty during the daytime and shut up in an aviary at night. The young cock was the first to discover the female, and at once began to pay his addresses to her, his attentions being very well received: after some days I introduced the old cock to the hen during the younger bird's temporary absence. The old cock was equally attentive to her and she, I regret,

to say, was as responsive to him as to her first suitor. Before long, however, the latter appeared on the scene, not best pleased with the turn events had taken. I expected a squabble in which the young bird would be worsted, but to my surprise the old fellow gave way to him with hardly any resistance at all and left him with the lady, obviously recognizing that he had a prior claim. Yet the same evening when the hen had been taken indoors and the two cocks were alone in the aviary, the old one was master as before. I tried the experiment several times and always with the same result. The old cock would court the hen with great energy until the young one turned up and then immediately cleared out, but when he and the other male were about together the young bird gave way to him. In the end I paired the hen to the old cock, shutting the two up in the same aviary, and very soon the young cock recognized that his suit was hopeless and when they were again all together he gave way to the old bird on all occasions. Eventually I was able to console him with a mate of his own.

In the case of Rock Peplars the hen is master, but the cock not infrequently asserts himself during the breeding season and if he suspects his mate of neglecting her domestic duties drives her home to the nest with bites and abuse. I have a cock Rock Peplar paired to a Crimson-winged Parrakeet whom he is not powerful enough to discipline in the way he might do a mate of his own species. If the Crimson-wing appears to him to be neglecting her log, he dare not bite her, but makes up for it by continual nagging, following her about whining and grumbling and flapping his wings (a Rock Peplar's way of showing anger) until he so gets on her nerves that for the sake of peace she gives way to his wishes! Rock Peplars are good parents and both sexes feed the young long after they have left the nest, and give way to them for many weeks after they have ceased to feed them.

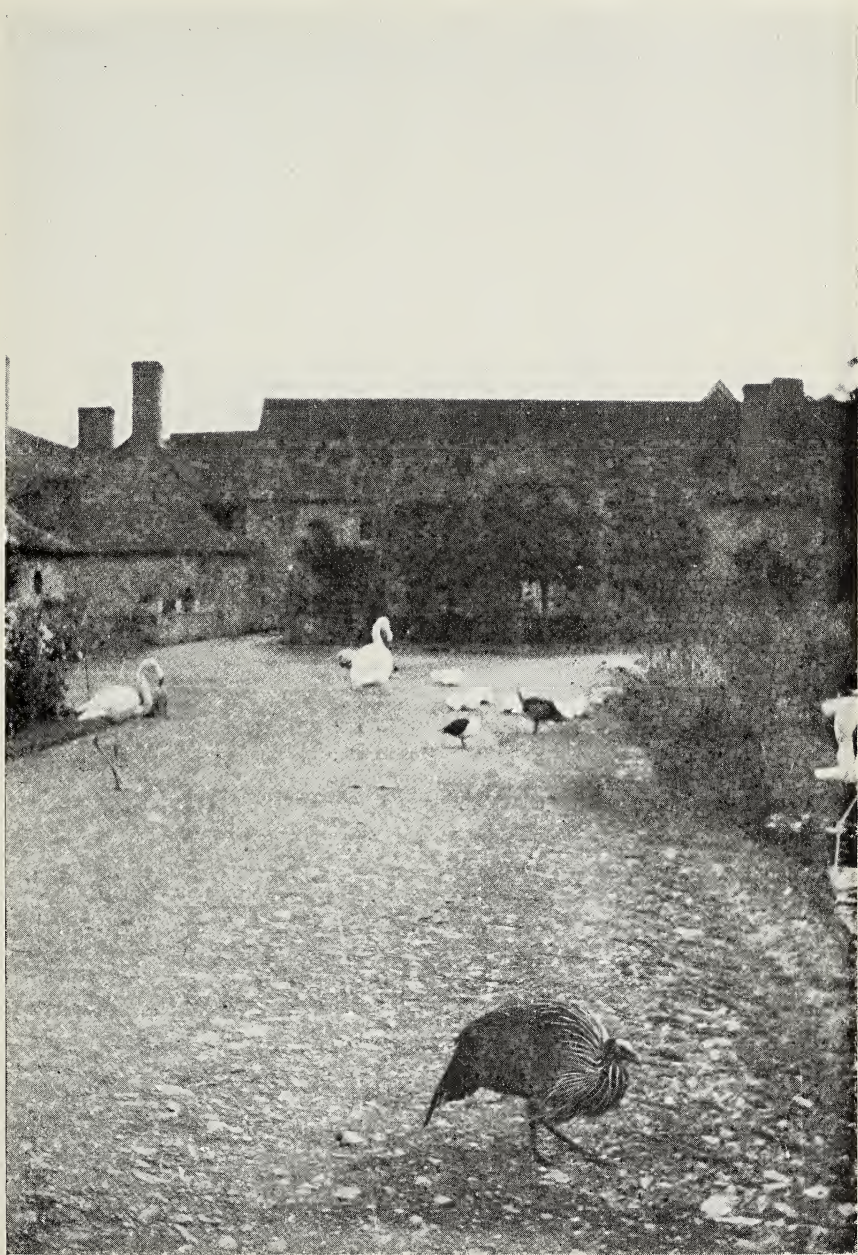
I have not owned a sufficient number of Queen Alexandra Parrakeets to be able to say with certainty what are the relations between the sexes. As a rule male and female seem to show little regard for each other outside the breeding season, and the female is usually master. They certainly do not seem anything like so attached to one another as Barrabands.

The Broad-tailed Parrakeets are in many ways a great contrast

to the Polyteline. With Broad-tails the cock is very much master, and decides the movements of the pair when at liberty. During the breeding season he allows his wife a certain amount of licence, and permits her to pretend to bite him when he gets in her way, but she knows very well that she must not presume too far and keeps out of her mate's reach if anything happens to upset his always rather irascible temper. The cock Broad-tail is, in fact, a gentleman of the old school. In many ways he is a faithful and devoted husband and is much concerned at the loss of his wife at any time of year. But he is also proud, jealous, and peppery. When the hen is first introduced to him he expects her to show a becoming degree of modesty, and woe betide her if she allows herself to appear too forward and demonstrative. If he suspects her (often on the slenderest grounds) of encouraging a rival he can be very spiteful, and if he is convinced of wilful desertion he can be perfectly murderous. I once had a cock Barnard whose hen was liable to egg-binding, and whenever she was returned to the aviary after being taken into hospital for treatment it was necessary to drive the cock out and keep him out for some days, for he was furious and for at least forty-eight hours was bent on killing her. It was not simply that he mistook her for a new hen, for his behaviour towards a stranger, though very unfriendly, was entirely different. Broad-tails get tired of their young and drive them off a few weeks after they have left the nest, the hens being the first to turn them adrift. In the rare cases when, in captivity, the hen of a pair of Broad-tails proves to be the master there is little prospect of a successful marriage. The cock fears and often dislikes his too masculine companion, and lack of proper discipline has a most pernicious effect on the character of the lady who becomes more and more unfeminine in her actions and demeanour.

The Psephoti have much the same marriage customs as the larger Broad-tails, although the cocks are, on the whole, on more intimate terms with their mates, sometimes preening their heads and rarely provoked by any contretemps into inflicting punishment upon them. They tire quickly of their young when the latter have left the nest.

Among Bluebonnets the cocks rule the roost, but they are on very intimate terms with their mates with whom they sometimes



BRINSOP COURT. — VULTURINE GUINEAFOWL ET WATERFOWLS

play like Lorikeets. The curious aberrant Red-capped Parrakeet (*Porphyrocephalus spurius*) appears to live on friendly terms with his mate throughout the year, and like the true Broad-tails feeds her when she is sitting.

In the case of the Blue-winged Grass Parrakeet (*Neophema venusta*), and probably also of its near allies, the hen is very decidedly master, and keeps her husband well in subjection, treating him in the severest manner if she suspects another lady of taking too great an interest in him. The parents seem to stay with their full-fledged young longer than the Broad-tails, possibly because they are single brooded. With Budgerigars, as is generally known, the hens also are the stronger sex, and depraved individuals have been known to go so far as to murder their partners. The cock Budgerigar sometimes pairs for life, but he is decidedly fickle and his affections are easily diverted when his wife is not in breeding condition, nor under these circumstances does she seem to worry if he goes off with a fresh companion. As is usual among Parrakeets, the cock tires of his family less soon than the mother, and feeds them for a longer period, although it cannot be said that even he is in favour of coddling children old enough to take care of themselves.

In the case of the true Lovebirds and Parrotlets the hens are mistresses of the situation. The sexes seem very faithful and pair for life, exhibiting a great deal of affection, but also, on the principle "*amantium irae amoris integratio est*" indulging in fairly lively squabbles from time to time.

NOTES FROM RHODESIA

By SYDNEY PORTER

(Continued from p. 217)

Many hours of the tedious journey from Cape Town to Rhodesia were beguiled by watching the birds. Often flying over the bushveldt could be seen the Black-shouldered Kite (*Elanus caeruleus*) with out-stretched motionless wings, sailing along with slight undulations, its head moving from side to side as it searched for its prey. Sometimes, on telegraph poles or some other conspicuous point of advantage, this bird could be seen all along the line.

At times a solitary Knorhaan would be seen flying with measured wing beats over the scrub. The Knorhaans are large birds of the Bustard family, and are fairly common all over South Africa.

In the sandy wastes of Bechuanaland flocks of Sand Grouse were disturbed by the passing of the train. After running a few yards they flew far away with their swift, pigeon-like flight.

By the sides of streams and rivers one often saw small parties of the White-bellied Stork (*Abdimia abdimi*), a short, thick-set bird much shorter than the familiar White Stork, and in carriage resembling an ibis rather than a Stork. These birds are very familiar objects in Rhodesia, associating in great flocks and frequenting the cultivated lands in search of insects, especially locusts. The name given to this bird by the Rhodesians is the Black-locust Bird. Its great economic value is universally recognized. The plumage is glossy black with a broad white band which crosses the lower abdomen.

At one of the stations en route was a tame Brown-necked Parrot. These Parrots, I understand, live in the interior of Bechuanaland and also, of course, further up north.

Rollers were extremely plentiful, occupying conspicuous places by the side of the railway, but of these beautiful birds I shall have more to say later on.

At one little siding, amongst other zoological treasures brought by the natives for sale was a nest of four baby Moselikatze's Rollers (*Coracias caudatus*) in perfect health and plumage. How I longed to buy them, but as I had three more days to go in the train it was quite impossible.

A few miles from Gwelo, which is between Bulawayo and Salisbury, on a flat-topped tree by the side of the railway, was a Secretary Bird's nest with both birds standing in it, so I should think that they evidently had young ones.

Imagine my joy upon arriving at my destination to find it a perfect avian Eldorado; everywhere were crowds of birds; flocks of snow-white Egrets, gay Bee-eaters, Rollers, and jewelled Sunbirds, and around my hut were crowds of Waxbills, divers Finches, Flycatchers, etc. What happy anticipations I had of spending nearly two years amongst such a host of feathered friends!

I remember seeing some years ago in Hamlyn's a large cage full of grey birds, and being little more than a child at the time I had no idea of what they were, but they looked fascinating, and on asking I was informed that they were Grey Turacos (*Schizorhis concolor*). Strange to say, these were the first birds that I saw and heard in Rhodesia. The Grey Turaco is a bird that the proverbial blind man in a dark room could hardly miss. It is a large bird, about two feet in length, uniformly a smoky grey in colour. The tail is long and the whole plumage of a very light soft texture. The head has a full crest of decomposed feathers. The beak is thick, short, and slightly hooked.

These Turacos consort together in small flocks of from six to twelve, and frequent the well-wooded districts, feeding upon the wild fruit and berries. They seem to glide from tree to tree with a remarkably graceful and easy undulating flight, jerking their tails up and down upon alighting. They are extremely noisy birds and their chatter is incessant, but the most remarkable thing is the call-note, which is "Go-away", repeated several times, and from which it derives its African name the "Go-away Bird". The call is wonderfully distinct, clear, and resonant, and can be heard from quite a long distance, and when once heard can never be forgotten.

In the winter-time, when the fruit is ripe these birds visit orchards and feed upon the fruit, especially upon guavas. The nest is said to resemble a pigeon's and also the eggs.

There are several different species of Turacos that inhabit Rhodesia. One that comes from the eastern part of Rhodesia, inhabiting dense forests on the borders of Portuguese East Africa, is of extreme beauty, namely the Purple-crested Turaco (*Gallirex porphyreolophus*), but the Grey Turaco is the only one that I have personally observed. Of the lovely family of Rollers Rhodesia can boast of many examples of these super birds, but only three have come under my observation—the well-known European Roller (*Coracias garrulus*), the Moselikatzé's Roller (*Coracias caudatus*), and the rarer Racquet-tailed Roller (*Coracias spatulatus*). Of the former there is very little to say, as it is so well known and was bred in the days before I was born by a member of the Avicultural Society. It is exceedingly abundant in Rhodesia

in the summer months, but leaves at the beginning of the winter (April). Around Salisbury its favourite perch is on the telegraph wires, where it can be seen in the same numbers as the Swallows in England before the migration.

The second bird named after the famous Zulu chief Moselikatze (pronounced "Umsilikars"), is the most noticeable of the three, and when in flight there are two very pronounced features, namely the beautiful lilac-pink bloom about the chest and the long pointed outer tail-feathers. This bird is rather shy, and will not allow such close observation as will the European species. Its favourite perch is on the topmost branch of a dead tree, from which it sails forth at frequent intervals to capture winged insects. I have often seen it stated that Rollers feed exclusively on insects captured on the wing, but from my observation this seems to be rather erroneous, because I have many times seen them searching for insects upon the ground, especially locusts and grasshoppers. In common with the rest of the family these birds feed upon lizards, young snakes, also the eggs and young of smaller birds. Some years ago there was a coloured plate of this handsome bird in the AVICULTURAL MAGAZINE.

The Racquet-tailed Roller is occasionally seen but is not nearly as numerous as the previous two, and can easily be distinguished by the long spatule tail, and it is altogether of a more general pale blue.

In Rhodesia there are several kinds of soil—red soil, sand veldt, contact, and black soil, etc.—and it is a very noticeable feature that different species of birds are partial to the different kinds of soil, the Rollers seem particularly attached to the sand veldt. The reason for this I have been unable to find, except that it may be more conducive to the insects upon which they feed.

In the whole of South Africa the family of Coraciidæ are known as Blue Jays.

The gem of all the river birds is certainly the Malachite Kingfisher (*Corythornis cyanostigma*)—a tiny gem only about half the size of the English Kingfisher. The whole upper portion of the body rich ultramarine blue shaded with violet, the throat white, and the under parts bright chestnut. There is a fan-shaped crest which is not noticeable, except when the bird is sitting on some branch overhanging



BRINSOP COURT. — FLAMINGOES

the water in a state of relaxation. The feathers of which it is composed are narrow and alternately banded with black and bright blue. The extraordinary long bill, which seems almost as long as the bird itself, is bright coral red, which is also the colour of the diminutive feet.

Sitting by the beautiful Umsuru River in the heat of the day under the welcome shade of a mimosa-tree, one sees in the sunlight on the water what seems to be flashes of brilliant violet and red: it is this tiny Kingfisher flying at an incredible speed over the surface of the water taking fish to his hungry brood in the nest burrowed out in some high sand bank higher up the river. In fact the flight is so swift that the unobservant eye never notices it at all. Sometimes he will rest awhile on a twig just over the water and preen his feathers or gaze awhile at his reflection in the dark mirror beneath.

What happy days those in that paradise of sylvan beauty: the slow-moving dark river in some places nearly covered by the pale blue fragrant lotus lilies, the edges fringed by tall green reeds and giant mimosa and a dozen kinds of other trees whose branches nearly touch the water. The bright green water-snakes gliding with scarcely a ripple over the water, and sometimes the sinister figure of a crocodile floating downstream looking like a log of wood except for the cold cruel eyes. I would that I could paint with my pen a picture that would convey to the mind the beauties of that river, but alas! my literary capacity is limited, as these notes show. But there is the home of a hundred and one brilliant birds—Bee-eaters, Rollers, Pittas, Kingfishers, Woodpeckers, Turacos, Whydahs, Weavers, etc.—the place where they live their lives undisturbed by man. Would that it could always be so, but in a few years' time, as the progress of civilization advances, the trees will be cut down to feed the fires of the tobacco barns, the fertile soil ploughed up for mealies, cotton, or tobacco, and the birds too will be gone. I hope I never return then.

To return to our subject, the Malachite Kingfisher inhabits the whole of South Africa and is fairly common by all rivers, streams, and ponds, feeding almost exclusively on small fish which it captures by diving under the water. The nest is at the end of a narrow tunnel excavated by the birds in a bank. The tunnel varies from eighteen to twenty-four inches in length and one and a half inches in diameter. The eggs are white, five to six in number, and are very thin-shelled.

Occasionally on the sand veldt one sees several members of the genus *Halcyon*, or Bush Kingfishers. These birds differ in many ways from the other members of the family of the Alcedinidæ; in the first place they inhabit the dry, partially-wooded bush veldt, spending most of their time in the tall trees, but usually there is a river in the vicinity, perhaps within half a mile or so, and secondly their diet is less an exclusively fish one. They subsist mainly upon insects such as grasshoppers, locusts, etc.

The two species that I have observed at close proximity are the Striped Kingfisher (*Halcyon chelicuti*) and the Brown-hooded Kingfisher (*Halcyon albiventris*). The former is rather a drab-coloured bird for a Kingfisher, being of an ashy-grey colour on the head and breast striped with narrow longitudinal streaks of black. The wings are a pale greenish-blue and the tail and lower back the usual Kingfisher blue. The Brown-hooded Kingfisher is a much more handsome bird. The head is similarly coloured to the preceding. The neck is whitish, the feathers streaked in a like manner to the head. The wings bright blue, the primary coverts tipped with black, the mantle and lesser wing-coverts rich black, the lower back, rump, and tail bright cobalt blue. The chin and throat white, and the breast rufous. Beak red, tipped with black, and the legs also red. The female differs in having the upper parts dark brown instead of black.

The Bush Kingfishers are timid and wild, but if one has great patience and carefully and quietly follows these birds up they can be watched at pretty close quarters for a considerable length of time. Their large soft brown eyes are in constant motion and at the least sign of danger there is a flash of blue and they are gone.

These birds inhabit the temperate regions of South Africa, seeming not to wander much further north than the Zambesi Valley. They are said to frequent the vicinity of the homesteads, but this has never been my experience.

The nest, as is usual with all Kingfishers, is at the end of a fairly long tunnel in a high bank; sometimes the tunnel is as long as 4 feet.

Sometimes when lazing by the dreamy river a loud piping, but rather melodious whistle would bring one to the land of reality. It is the call-note of the Pied Kingfisher (*Ceryle rudis*), a handsome fellow,

though he boasts of no brilliant colours like most other members of the family. His plumage, as his name implies, is black and white arranged in such a fashion as to render an accurate description rather tedious, but the upper parts have a general speckled appearance and the under parts white, the male having a black band across the chest, which is lacking in the female. The head in both sexes is crested. The long beak and feet are glossy black. The flight is swift but not to be compared with the arrow-like flight of the Malachite.

A pair of these birds I had under observation for a considerable period. They had a nest in a high bank of a little bay in the river: it was in a very conspicuous position, but almost impregnable, for the bank rose sheer out of a deep still pool that the swirling water of flood-time had cut out. The earth was so hard that it was almost impossible to chip it with a penknife, so how the birds managed to bore their burrow to over a depth of 3 feet is rather a mystery, unless it was done in the rainy season when the earth was soft and moist. The hole was about 4 inches in diameter, and the bottom half to the depth of about half an inch was filled with wet mud of quite a different composition to the surrounding earth. The fish bones of which the nest was composed were almost like crumbled rich paper, quite clean and wholesome.

These two birds, the owners of the nest in question, seemed to show a great affection for each other, both perching on the same branch overhanging the water. The cock would sidle up to his mate with crest erected, looking at her with many loving glances, preening her feathers, and talking to her the while in a sweet warbling undertone.

The mode of fishing of the Pied Kingfisher differs from that of most Kingfishers. It poises itself in the air over the water with almost motionless outspread wings and drops down into the water on to its prey, which consists mainly of small fish. Its mode of bathing is peculiar too, and resembles that of the Swallows, dashing along the surface like a half-submerged submarine.

Sometimes these birds migrate from one river to another, flying high in the air but unmistakable owing to the great length of the beak, which seems quite out of proportion with the rest of the body.

There was a sad sequel to the happy existence of our little pied

friends. One night there was a terrific storm and the river came down in flood, flowing in a raging torrent high above the nest in which the whole family met their doom.

(*To be continued.*)

PRICES : THEN AND NOW

By DR. E. HOPKINSON, C.M.G., D.S.O.

From about 1894 to 1900, when hopes were higher and keenness greater, I kept a record of advertised prices of birds. Having just come across this old record, I think it may serve for an article of some interest for comparison with present prices and opportunities—both as regards most species, how much greater than in the “good old days”, “good” from a pecuniary point of view in this connexion, but rather older than I care to think about. This list will provide the “then” of the heading, the “now” (1924–5) can be got every week in *Cage Birds*, or monthly elsewhere. For comparison I have noted and added a few prices recently advertised.

The list is more or less alphabetical and the names used are mostly those of the original list, and these, in spite of the continual chops and changes, will, I think, be recognizable.

ALPINE ACCENTOR.—Fairly commonly advertised by Maschke, of Islington, 10s. a pair to 10s. each.

AURORA FINCH.—Sporadically imported, 20s. to 7s. 6d. a pair.

AMADINE FINCH (= Bib Finch).—7s. 6d. to 5s. 6d. a pair.

AVADAVAT.—3s. 6d. to 1s. 3d. a pair, and even 10s. a dozen. Cheapest usually from July to October. Extra fine ones in colour sometimes 5s. 6d. to 6s. 6d. a pair.

ALARIO FINCH.—Only two entries. Cocks 7s. 6d. each.

BENGALESE.—7s. 6d. to 4s. 6d. a pair. All white ones rather dearer, 10s. to 7s. a pair.

BICHENO FINCHES.—50s. to 16s. 6d. a pair, and once 12s. 6d., but these I remember were a particularly seedy lot.

BLUE GROSBEAKS.—Occasional ; average 30s. a pair.

BOBOLINK.—Three entries in 1894 and 1895 ; 3s. and 3s. 6d. each.

BOWER-BIRDS.—A very occasional entry rather later than my chief list. Lilac-crested Bower-Bird, 50s. 6d., 1902 ; Satin Bower-Bird,

60s. a pair, and "cock" 50s., 1903; Regent Bird, 60s. and 45s. each, 1903.

BARBETS.—Prices in 1902 and 1903: "Blue Barbet," 21s. to 20s. each; "Blue-cheeked," 25s. to 12s.; "Blue-faced," 23s.; "Red-crowned," 16s. 6d.; "Green," 12s. 6d.; "Himalayan," 15s.; "Indian," 29s. 6d.

Of these the "Blue", "Blue-cheeked", and "Indian" and probably other names stand for *Cyanops asiatica*.

To-day I note "Abyssinian Barbets" advertised at 35s. a pair.

BUDIGERIGARS.—"Imported," 16s. to 8s. 6d. a pair. Those advertised as "from Antwerp," etc., averaged about 7s. 6d., while "French" birds, mostly wingless moribunders, were as low as 3s. 10d. a pair. Yellow, 50s. to 20s. 6d. a pair. Blues were, of course, then unknown. A recent advertisement has both Green and Yellow ("show plumage") 14s. a pair; Blues, £8; Blue-bred, 27s. 6d. a pair.

BULBULS.—Occasional advertisements of several species at 30s. to 10s. 6d. each.

GREEN BULBULS (Fruitsuckers).—60s. to 20s. each.

BULLFINCHES.—"Russian" or "Siberian", 10s. to 5s. each; "German," 7s. 6d. to 5s. 6d.; "Pipers," 100s. to 40s., with "broken pipers" at about £1 occasionally.

BUNTINGS, BLACK-HEADED (*Melanocephala*).—20s. to 10s. 6d. a pair; Crested Black Buntings, 15s. each; Lapland, 5s. to 4s. each (in January and May, 1894); Ortolans, 10s. each to 10s. a pair, and one entry of 1s. 6d. each. When at the higher prices, they often appeared as "Auckland Nightingales".

CHESTNUT BUNTINGS (*Rutila*).—7s. 6d. each.

Occasional American Buntings to appear were the Chingolo, 20s. to 10s. 6d. or even as low as 4s. 6d. each, and the Song Sparrow, 10s.

CAPE CANARY.—Sporadic, 20s. a pair, to 5s. each.

CARDINALS.—Red, 20s. to 10s. Hens rarer, 17s. 6d. to 10s. Red-crested, 10s. to 6s. 6d. each, and as low as 4s. 6d. Popes, about the same; present advertised prices of both 10s. 6d. each. Green, 35s. a pair to 8s. each.

CATBIRD (American).—Occasional, 35s. to 15s. each.

CHERRY FINCH.—30s. to 8s. 6d. a pair.

CHESTNUT-BREADED FINCH.—17s. 6d. to 8s. 6d. a pair ; 1896 seems to have been their year.

COCKATOOS, LARGE SULPHUR-CRESTED.—40s. to 20s. each, and often quite common at the last price. I once bought one at this price, the most savage and hardest-biting beast imaginable at first, but which got tame in the shortest possible time, and developed into the best talking and most intelligent Cockatoo I have ever known. Lesser Sulphur-crest ("Java C."), average 20s. each. Roseate C., 30s. to 9s. each. Leadbeater C., 50s. to 20s. each.

COMBASOU.—7s. 6d. to 2s. a pair (10s. a dozen).

CORDONBLEU.—10s. 6d. to 2s. 6d. (12s. 6d. a dozen) a pair.

CUTTHROAT.—4s. to 2s. a pair and 10s. a dozen.

CRIMSON FINCH.—Rarely appeared and all the advertisements are between January and May ; 200s., 90s., 50s. a pair, with 30s. 6d. a pair once.

RUFICAUDA.—50s. 6d. to 10s. 6d. and 8s. 6d. a pair.

CUBA FINCHES.—Occasional, 60s. and 40s. a pair. Olive Cuba Finches, 35s. a pair and 17s. 6d. each.

COWBIRDS.—20s. a pair to 5s. each.

PIPING CROWS.—40s. to 20s. 6d. each.

DOVES AND PIGEONS.—A large entry, which one day I may summarize, ranging from the most expensive, such as "Crown Pigeons from New Guinea" at 180s. a pair (1896) ; "Wongawonga," 40s. each ; "Bleeding-heart," 60s. a pair ; and "Green Fruit Pigeons" and "Nicobars" at 50s. a pair, down to the cheapest—"Blue-winged Doves," 6s. 6d. ; "Zebra Doves," 5s. ; and "Indian Doves," 4s. a pair.

DIAMOND SPARROW.—25s. down to as low as 7s. 6d. a pair.

DIUCA FINCH.—Only occasional, 7s. 6d. each to 10s. a pair.

FIREFINCH.—10s. to 3s. a pair, the last being about the standard price.

GOLDFINCH.—"Russians," 8s. 6d. to 4s. 6d. ; "Continental," 3s. each to 15s. a dozen.

GOULDIAN FINCHES.—"Redheaded," 80s. to 25s. a pair, with an occasional advertisement : "cocks, 10s. each." "Black-headed," 50s. to 15s. a pair.

GRASSFINCHES.—Masked G., 32s. 6d. to 12s. 6d. a pair, with 10s. 6d.

a pair once. Long-tailed G., 15s. to 10s. a pair. Fire-tailed Finch, 200s. a pair. "Pied Grassfinch" (= Magpie Mannikin), 12s. 6d. to 8s. 6d. a pair.

JAPANESE HAWFINCH.—Occasional, but advertised in the summer of both 1895 and 1896, 20s. to 10s. each.

JACARINI FINCH.—Rarely appeared, 30s. each to 15s. a pair.

INDIGO BUNTING.—12s. 6d. to 3s. 6d. each, about 5s. each being the average price, at which they were always obtainable from about May to July. Recent prices I note are 17s. 6d. each, but £2 has often been asked. Hens used to be almost unobtainable, but in the last few years quite a large proportion in relation to the number of cocks have come in.

JAVA SPARROW.—4s. to 2s. 6d. a pair. White, 15s. to 12s. 6d. a pair. "Ticked," as low as 8s.

JAY THRUSHES.—Various species, 40s. to 18s. each.

KAFFIR FINCH (= *Pyromelana capensis*).—8s. 6d. to 5s. 6d. a pair in the summer of 1894. I have never seen any since.

LARKS.—Skylarks, 1s. 6d. each to 7s. a dozen. Wood-Larks, 10s. to 4s. each. Shore Larks, occasional, 20s. to 10s. each. Calandra Larks, occasional, 20s. to 10s. 6d. each.

LINED FINCH.—20s. a pair. Other *Spermophilæ* from 20s. to 10s. a pair, often advertised under various mysterious names, such as "Patativas".

LAVENDER FINCH.—10s. to 3s. 6d. a pair.

LOVEBIRDS.—Red-headed, 15s. to 6s. a pair. Peach-faced, 80s. to 30s. a pair. Grey-headed, 10s. to 3s. a pair. Blue-winged, 15s. to 4s. 6d. a pair.

HANGING PARRAKEETS.—Occasional, 35s. to 20s. a pair.

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MOCKING BIRD.—60s. to 10s. each.

MYNAHS.—25s. to 12s. 6d. "Rock Mynahs" dearer than "Hill Mynahs". Malabar Mynahs, 12s. 6d.; Pagoda Mynahs, 12s. 6d. to 7s. 6d.; Brown Mynahs, 10s. to 6s. each.

NIGHTINGALE.—60s. to 10s. 6d. each; the latter no doubt being fresh caught gentle-eating birds.

NONPAREIL.—12s. 6d. to 6s. 6d. each. Only cocks imported and they came over with Indigos in the cages (each bird separate) in which the Hartz Canaries had been taken to America. Recent advertisements give 25s. each as the price.

PINTAIL NONPAREIL.—Sporadic, 40s. to 20s. 6d. a pair, with one fall to 12s. 6d. and 10s. a pair. The odd sixpence in such prices as 20s. 6d., 200s. 6d., will perhaps recall to the more mature the particular dealer who made almost a speciality of this little supplement.

NUNNS AND MANNIKINS.—Chocolate Mannikins, 3s. to 2s. a pair, 10s. a dozen; 6s. a pair the present price. Tricolour Mannikins, 8s. to 2s. 6d. a pair. White-headed Nuns (Majas), 6s. 6d. to 3s. a pair.

STRIATED FINCHES.—20s. to 3s. 6d. a pair. Only appeared from time to time.

NUTMEG FINCH (Spice Bird).—4s. 6d. to 2s. a pair, 10s. a dozen; 6s. a pair to-day.

ORIOLES.—Golden Orioles, 40s. each, always about March. Baltimore Orioles, occasional, 40s. each.

Other American Orioles (Troupials) advertised were "Yellow Troupials", "Gold and Black Troupials", "Black Hangnests", "Black Casiques", "Jamaica Hangnests", at prices varying from 70s. to 15s. each, and "Marsh Troupials", "Chilian Jackdaws" (? Chopis), "Mexican Starlings", and "Chocolate-headed Starlings", etc., at from 23s. to 5s. 6d. each.

Military Troupials averaged from 10s. to 6s. each, with one advertisement of them at 50s. a pair, which, however, I can hardly think really meant these then commonly imported birds.

PARROT FINCH.—Rare, 100s. to 30s. a pair, the prices generally nearer the first than the last.

PARSON FINCH.—12s. 6d. to 9s. 6d. a pair. They appear then to have been nearly always obtainable.

PILEATED FINCH.—Occasional, 10s. to 6s. each.

RED-CRESTED FINCH.—Still more occasional, 20s. each to 17s. 6d. and 15s. 6d. a pair.

PARROTS.—Rock Peplar Parrakeet, 160s. a pair to 40s. each. Eclecti, 50s. to 25s. each. Great-billed Parrakeet, 50s. to 54s. each. Blue Mountain Lory (*Novæ hollandiæ*).—50s. to 25s. 6d. each. Purple-

capped Lory, 60s. to 25s. 6d. each. Many other Lories also advertised at prices varying from 100s. to 25s. King Parrot, 70s. to 30s., with an occasional drop to 20s. for "hens". Blue-fronted Amazons, from 100s. for talkers down to 10s. for freshly imported birds. Present prices seem to average about 40s. for the latter. Other Amazons advertised were "Red-fronted", "Yellow-fronted", "Double-fronted", "Festive", "Mealy", "Yellow-naped", "Diademed", with more occasionally "Cuban", "Pigmy", "Tricolour", "Spectacled", and "Red-tailed", at all sorts of prices from 100s. to 25s. 6d. Grey Parrots, from 210s. for "marvellous talker" to 10s. for newly arrived birds. Rock Parrots, 50s. to 6s. 6d. Yellow-breasted Conures, 6s. 6d. to 3s. Patagonian Conures, occasional, 50s. 6d. a pair down to 18s. each. Golden-headed Conures, 15s. each to 15s. a pair. A good many other Conures on offer at various prices. Cockatiels, 25s. to 10s. 6d. a pair. Ringneck Parrakeets, average 4s. 6d. each. Blossom Heads, 40s. to 10s., with occasionally 5s. for "young birds". Pennants, 70s. a pair to 15s. each. Rosellas, 35s. a pair to 10s. 6d. each. Crimson-wings, 60s. to 30s. each. Turquoisines, very occasional, 80s. to 60s. each. Many-coloured, very occasional, 120s. to 60s. a pair. Bluebonnets, very occasional, 35s. each. Port Lincolns, 40s. a pair to 15s. each. Barnard's 40s. 6d. to 30s. 6d. a pair. Barrabands, 70s. to 40s. a pair. Bauers, very occasional, 40s. a pair. Red-vented Parrakeet, 55s. a pair to 20s. each, occasionally. Tavis, Orange-flanks, etc., 40s. 6d. a pair to 10s. 6d. each. Lineolated Parrakeets, occasional, 35s. to 30s. a pair. Senegal Parrots, very occasional, 60s. a pair.

BLUE ROBINS.—17s. to 12s. 6d. a pair.

PEKIN ROBINS.—7s. 6d. to 3s. 6d. a pair, with sometimes a fall to 18s. a dozen about January.

SEPOY FINCH.—Once advertised at 80s. each.

GOLD-FRONTED FINCH (*S. pusillus*).—Once at £5.

SAFFRON FINCH.—10s. to 5s. a pair.

SILVERBILLS.—3s. 6d. to 2s. a pair and occasionally 10s. to 12s. a dozen. These mostly African, Indian less common and usually dearer.

SINGING FINCHES, GREEN AND GREY.—7s. 6d. a pair to 2s. 6d. each.

SISKINS.—5s. to 2s. each. "Russians," 5s. 6d. to 2s. 6d.

SHAMAS.—Irregular, 60s. to 25s. each.

DAYALS.—Rarer. About the same.

GLOSSY STARLINGS.—Short-tailed, 10s. to 5s. 6d. each ; Long-tailed, 25s. 6d. to 10s. Neither very often advertised, but usually when they did appear were obviously rather a glut on the market.

TANAGERS.—Not often advertised, and then at from 40s. to 20s. each, with Violet Tanagers sometimes as low as 29s. a pair.

ROCK THRUSHES.—Occasional, 60s. to 25s. each.

BLUE THRUSHES.—60s. to 30s.

GREY-WINGED OUZELS.—Once at 80s. each.

TUI BIRDS.—Rare, 200s. to 40s. each.

WAXBILLS.—Grey, average 3s. a pair ; present price, 5s. a pair. Orange-cheek, about the same. Zebra, 5s. to 2s. 6d. a pair. St. Helena, 5s. 6d. to 3s. a pair. Do these larger much-barred Waxbills, “ Pheasant Finches ” of old days, ever come in now ? Sydney Waxbills, rarely advertised, but when they did appear, were quite cheap at from 16s. 6d. to 12s. 6d. a pair. Green Waxbills, only advertised from March to July, but appeared regularly every year. Prices, 7s. 6d. to 3s. a pair, and once or twice as low as 18s. a dozen.

WEAVERS, ORANGE BISHOPS.—5s. 6d. to 2s. 6d. a pair out of colour, and “ Cocks in full colour ” at 7s. 6d. Grenadier and Crimson-crowned, less common, but at times advertised at from 5s. 6d. to 4s. out of colour, and at 7s. 6d. each when in colour. Napoleons, as the Orange Bishops. Red-billed Weavers, 4s. to 2s. a pair, and sometimes 12s. 6d. a dozen. Madagascar Weavers, 8s. to 5s. each ; “ cocks in full colour ” regularly on the market every year from about March to August. Bayas, occasional, averaged 10s. 6d. a pair. Yellow Weavers of various sorts, 20s. to 12s. a pair.

WHYDAHs, PARADISE.—8s. 6d. to 4s. a pair out of colour ; 20s. to 15s. with the “ cocks in full colour ”. Pintailed, 7s. 6d. to 4s. a pair. Yellow-backed, rare, 35s. to 30s. a pair.

ZEBRA FINCH.—7s. 6d. to 4s. 6d. a pair.

ZOSTEROPS.—Irregular, 25s. to 4s. 6d. a pair. Both *lateralis* and *palpebrosa* were named.

In 1902 a Purple-rumped Sunbird was advertised at 40s., the first I think ever advertised in this country.

CORRESPONDENCE

SURPLUS PETS

SIR,—Aviculturists, particularly those with large collections, sometimes have birds which are rather in the nature of white elephants, being unattractive to their owners and their owners' friends and worth very little in the market. I wonder if members realize that, in Great Britain at any rate, such birds can be disposed of in a way which gives an enormous amount of pleasure to people less fortunate than ourselves and insures a happy home for the birds where they will be cherished as though they were the greatest rarities?

All that is necessary is to write a letter to the weekly paper *Cage Birds*, offering the bird to a good home and giving a brief description of its appearance, requirements, and outstanding virtues and vices. No matter how common, plainly coloured, or even defective and injured the specimen for disposal may be, the letter will evoke a perfect sheaf of applications. If, however, the stipulation is made that no prepaid telegrams or stamped envelopes be sent, and no replies be expected from unsuccessful claimants, the trouble of looking through the correspondence and picking out the most suitable application is not really great. When disposing of surplus stock in this way I have been both astonished and touched to discover the enormous number of people there are in the world, including children, cripples, and disabled ex-Service men, who simply long to have a bird of some kind as a pet, but are unable to afford to buy one. Many applications are also received from people who already keep a few birds and are obviously experienced in attending to them. Canaries and British birds are accepted as eagerly as others.

TAVISTOCK.

THE BEAUTIFUL SPREO

SIR,—I think it may perhaps interest the readers of the AVICULTURAL MAGAZINE to know that I kept the "Beautiful Spreo" (*Spreo pulcher*) some years before the War, as you consider him to be new to English aviculture. I had some of these interesting birds that I kept in large cages or all together in a large aviary. They did not breed with me, though, I suppose, I had cocks and hens at a time, perhaps because I had too many birds in the aviary. Some time before the War I acquired a fine cock at Bordeaux. He is still living and well. I consider him as being a very hardy bird, as I have wintered him out of

doors these last years, which have been very wet in this country. In 1921, M. Delacour bought a hen, and I sent him my cock to pair with her. The hen laid fertile eggs in a log and incubated them, but they did not hatch out. She died of a chill in the autumn, and the cock, who had also been taken ill, was sent back to me. I kept him in a warm room all the winter, coughing and breathing heavily. He recovered, however, and is now in good condition; I think he would breed, in spite of his old age, if I were fortunate enough to get a mate for him. Though not so brilliant as the other Glossy Starlings, he is, in my opinion, one of the finest of his tribe. The finest of all is certainly the *Cosmopsarus regius*. I think I was the first in Europe to keep this species in captivity, for I bought the first pair that reached Marseilles in January, 1924. The species is not so robust as the other Glossy Starlings, and is very sensitive to cold and wet.

I have not been very lucky with my birds this year. I have lost some valuable birds and so far have not bred many young. The Blue Robins (*Sialia sialis*) and the Shammas have young out of the nest, and some Australian Finches, Doves and Parrakeets have bred, too.

DECOUX.

A LUTINO BLUE-FRONTED AMAZON

SIR,—By the kindness of Mr. P. Castang, I was able, some weeks ago, to obtain a very beautiful Lutino Amazon Parrot—the only one I have ever seen. When first I heard of the bird, I was somewhat suspicious of its genuineness, recalling tales of South American Parrots doctored with a preparation which produces a growth of yellow feathers. Mr. Seth-Smith, however, was good enough to have a look at the bird for me and pronounced it a true Lutino, as it certainly is.

Its plumage may be best described by saying that all those areas which are green in a normal Blue-front are a lovely deep golden yellow, all the blue areas are white, and all the red of the normal plumage is retained. The eye is pink and the beak and feet cream colour. The bird is quite tame and in excellent health, though deep in moult. If the fates are kind I hope to show it later in the year, and I think it will take some beating!

Being a Lutino and an Amazon, it is almost certain to be a female. Miss Knobel has been good enough to send me a member of the opposite sex which is so strangely rare in confinement, and the year after next I shall hope to induce the pair to breed.

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It will doubtless be of interest to all Readers of this magazine to hear that we have recently been successful in securing a large piece of valuable Land adjoining our Tottenham Court Road premises on which we are about to build the finest store for the care and sale of live Animals and Birds in the World, full particulars of which will shortly be published in our Monthly Notes, a copy of which may always be had on application by enclosing a stamp to cover postage.

At the present time we have our Collectors at work in Australia, the Malay States, Burma, India, the Transvaal, Northern Rhodesia, British East Africa, Abyssinia, Pernambuco, Para, Bahia, Trinidad and Mexico, from which we shall very shortly be receiving unrivalled collections of both Birds and Animals.

We shall be receiving, during the month of November, shipments from :—

INDIA : comprising a magnificent collection of Shamas, Sibias, Robins, Tits, Niltavas, Pittas, Rollers, Sarus and Demoiselle Cranes, Adjutant Storks, Monaul and Tragopan Pheasants, Himalyaan Black Bears, etc., etc.

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Write or call for a copy of our **MONTHLY NOTES**, in which will be found a full list of all stock which we have on hand at the present time and detailed particulars of consignments coming along.

All interested in **Budgerigars** should call and see our splendid collection of **Mauve, Cobalt Blue, Blue, Olives, Yellow, Green and Blue Bred** varieties of these most charming Birds. We shall also be receiving further specimens of the very rare **White Budgerigars** in the very near future.

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THE AVICULTURAL MAGAZINE

BEING THE JOURNAL OF
THE AVICULTURAL SOCIETY
FOR THE STUDY OF
FOREIGN & BRITISH BIRDS
IN FREEDOM & CAPTIVITY

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BREEDING THE GARRULOUS HONEY-EATER (*MYZANTHA GARRULA*)

By W. E. SUGGITT

The Garrulous Honey-eater appears to be a rather rarely imported species. It is of sober plumage, but is, nevertheless, quite a handsome bird. The following is a brief description of the adult: Grey, darker on upper surface, narrowly barred on back of neck and breast; crown, ear coverts, and V-shaped mark on throat, black; naked patch behind eye, yellow; forehead white; wings brown, with distinct tinge of green in certain lights; tail, brown with dirty white tips to most of the feathers; bill and feet, yellow. The female is slightly smaller than the male, but similar in plumage. Size about that of the Starling. An illustration appeared in the AVICULTURAL MAGAZINE for August, 1924.

These birds are very easy to cater for in captivity; they thrive on milksop and a few mealworms. They will also eat a little insectile food and fruit occasionally.

They are restless and noisy, and their voices can be heard at a great distance. Although not quarrelsome, they would probably be dangerous to small birds when nesting. They are not fond of bathing.

My birds, which were obtained in February of the present year, were caged until early in April, when they were turned into a small aviary, with a few other unmated birds. Within a few days of their release into the enclosure, they commenced to gather dry grass into three or four shapeless heaps in the bushes. These accumulations were added to indiscriminately or pulled to pieces and taken to other sites, but as none

of them bore the slightest resemblance to a nest I began to lose a good deal of interest in the proceedings. One day, however (15th June), on entering the shelter shed rather suddenly I flushed one of the birds out of a small round basket, fixed on the wall, about 7 feet from the floor. The basket contained a compactly built nest, about the size of that of the Song Thrush, but with a shallower cavity. The nest was built of coarse grass with a lining of very fine pieces of the same material. It contained one egg, white with a warm pink tint, and with large spots of bright red, fairly evenly distributed, but slightly more numerous at the large end.

The hen apparently missed laying on 16th June, on the 17th there were two eggs. Incubation commenced with the laying of the first egg.

It is almost impossible to ascertain whether incubation is shared by both sexes. The slightly smaller size and slenderer bill of the female are not perceptible unless the birds are closely compared, and I could never catch one of them relieving the other on the nest.

The din made by both birds when anyone went near the nest was appalling. Their voices, when raised in protest, were like the noise made by the squeaker in an indiarubber toy, but incomparably louder, and if any attempt was made to examine the nest they would go one better and give vent to ear-splitting screams.

I did not care to run the risk of the birds deserting their nest on account of too much interference, and only made occasional furtive inspections with the aid of a hand mirror. On 26th June one of the eggs had disappeared; the remaining one hatched on the 30th, when a hasty peep with the mirror revealed a dark-skinned squab.

I gave them a liberal supply of small mealworms, three or four times daily, in addition to spiders and other live food that I was able to collect; blow-fly pupæ were also provided, but these the old birds would scarcely touch. When there were no mealworms or spiders available milksop was freely given to the nestling.

On this diet the youngster made splendid headway, its constantly repeated food cry of *whit whit* growing stronger every day. On the morning of 16th July it was sitting on the edge of the basket, fully fledged, and in the afternoon it had taken up a perch on a branch—a strong perky little fellow.

Early in August the young one was able to fend for itself, but it continued to follow its parents about for food until it was over ten weeks old.

Towards the end of July a second nest was built in a thick privet bush. Three eggs were laid on successive days, 2nd, 3rd, and 4th August. Incubation commenced as before, with the laying of the first egg. From this nest I had hoped to get a fuller description of the nestlings and their development, but unfortunately all three eggs proved to be infertile.

The young bird is now caged separately. It resembles the adults, except for a few minor differences; the barring is not quite so distinct, the naked patch of skin behind the eye is dirty white instead of yellow, and the bill and feet are darker.

NOTES FROM RHODESIA

By SYDNEY PORTER

(Continued from p. 256)

There is one bird that frequents the environs of The Homesteads, and which is occasionally seen in the wooded parts by the rivers, that is of surpassing beauty—the Scarlet-chested Sunbird (*Cinnyris gutturalis*). I am sure that it can put some of the humming birds in the shade as far as beauty is concerned. It is one of the largest of the Sunbirds, about the size of a Great Tit, but of a more slender build. As one sees these beautiful creatures in the trees they appear to be black, not a sombre black but an intense velvety black with a rich maroon tinge; but when the bird turns and faces one there is a flash of brilliant, fiery, ruby red, and the whole breast appears like a glowing ember. On closer examination it will be found that the wings and tail are of maroon-brown, the forehead and crown brilliant metallic bronze-green, also the upper part of the throat and two moustache-like lines at the base of the beak; the breast feathers, which at a distance appear to be intense ruby red, are really metallic pale blue tipped with the former colour. The blue is only seen when the bird is handled, when one observes the beautiful effect of the blue shining through the red. After death or after the bird has been in captivity for a little time the colours lose their intensity. The shoulders are a pale metallic

bronze-purple. The long curved beak and feet are black. The hen is a mouse colour, with black marking about the face.

They flit and hover around the flowers, inserting their long slender beaks into the cups, sucking up the nectar and minute insects with their hair-like tongue. I have often wanted to make an examination of the crop to ascertain exactly what food they really did subsist upon, but I could never bring myself to shoot one. One would be lacking in feeling, I think, to extinguish the tiny flame that animated such a glorious exterior. I have sometimes seen these Sunbirds catching flies after the manner of a Flycatcher and also hovering in the air after the manner of a Humming Bird under the eaves of the farm buildings searching for spiders, etc. In the garden was an old thatched pagoda covered with climbing plants; this was the favourite resort of Sunbirds, who spent most of their time minutely examining the foliage for insects.

The nest is a beautiful structure, pear-shaped and about 8 inches long and 5 in diameter, composed of cotton wool and various vegetable downs stuck all over with tiny pieces of bark, lichen, and skeleton leaves, and bound together by spiders' webs; the inside is lined with the softest down, the whole is securely fastened to the end of a slender branch of a tall tree and swings like a pendulum in the slightest breeze.

I have a nest composed of vegetable down and covered with pieces of fine lace and embroidery.

The female alone seems to feed the young, though no doubt the males assist at times. I often wonder if this bird is polygamous, for one usually sees several females in the company of one male.

One day I found the little boy of the house with a young Sunbird of this species which a native had taken from a nest near by; he was trying to rear it on breadcrumbs, and had placed it in an old Weaver bird's-nest in the bush, but fortunately this method of rearing only dated from a few hours previously, and when I rescued it it was just a tiny atom, naked and shivering, apparently only a day or two old. I took the nest, lined it with cotton wool, and fixed it firmly into a cardboard box. The lining I changed at frequent intervals during the day. I fed the youngster at intervals of about fifteen minutes from dawn to dusk, that is from about 4.30 a.m. to 6.30 p.m., on a syrupy paste of partly

boiled egg, powdered biscuits and flies, the latter from the kitchen, which swarmed with them. At intervals between the paste feed I gave a syrup of diluted milk, sugar and squashed flies from the end of a quill into which the little bird would insert its beak and greedily suck up the liquid with the aid of its slender tongue. I also gave small insects whole, such as spiders, etc.

Everything went well, and the young bird thrived apace, the pin feathers appeared, and in time the whole body was beautifully feathered, the colour was quite different from either of the parents, the back was mottled olive-brown and yellow, the breast bright yellow with brown markings at the sides.

In time it grew to anticipate my coming, and would climb on to the edge of the nest, making a peculiar whistling sound. It grew stronger every day, and would sit preening its feathers on the edge of the box that the nest was in; in fact my hopes of rearing it ran high, and I sent for a portrait attachment to my camera that I might be able to take its photograph, but it arrived a day too late. Now comes the sad ending, which is all the more disappointing because it was through my own carelessness—imagine my horror one day after feeding the Sunbird and placing it on the table in my room, on returning and finding one of my pet Crows playing with a tiny yellow and brown wing, all that was left of my charming little pet.

I had another Sunbird of the same species, an adult male in perfect plumage but with a broken wing. I had it for a day or two but it died in the end, for I think it must have had some internal injuries.

Some cynic once said of Africa that it was the land where men know not honour, the women virtue, and the birds song; he must have been a cynic or one of those unfortunate persons who if they see any bad anywhere lack the faculty of discerning the good: those kind of people who meet an objectionable individual of some other nationality than their own and straightway condemn the whole nation, or if they hear one raucous voice in the chorus of birds' songs can hear none of the sweet notes.

Of the first two cynical assertions this is hardly the place to discuss them even if I were in a position to do so. Our disappointed friend could certainly never have heard the liquid notes of the Bulbuls as

the golden dawn stole across the sky, or the beautifully sweet song of the little Black-throated Seed-eater and a dozen others whose voices swell the joyous chorus that each day welcomes the rising sun.

The little Black-throated Seed-eater (*Serinus angolensis*) has one of the sweetest songs of any of the birds that I have come across in Rhodesia. It is a small bird about the same size as a Redpoll, very similar to it in colour except that the lower back is bright yellow, which is only seen when the bird is in flight; the throat is black and there are also black markings on the face. The male, female, and young are all the same in plumage. It is never found far from the homesteads and is of a comparatively confiding nature.

The nest is a frail structure looking more like that of a Humming Bird than that of a Finch, and is placed or rather woven between some slender forked branches of a fruit-tree. This little bird seems to show a partiality for peach orchards. The eggs are two or three in number, seldom more, white finely spotted with chestnut; the young when feathered are exact replicas of their parents, and seem to leave the nest in an incredibly short time after they are hatched.

Their food consists mainly of grass seed. I have frequently seen them alight on the flowering grasses and feed upon the seed after the manner of a Waxbill.

One of the commonest birds in Rhodesia, certainly the commonest Weaver, is the Cabanis Weaver Bird (*Hyphantornis cabanisi*), which in common with all Weavers, Whydahs, etc., goes under the designation of "Fink". In colour and size it superficially resembles the well-known Baya Weaver of India, being of a brilliant golden yellow, the face and throat being dark rich brown, almost black; the wings, tail, and back, olive, each feather edged with yellow.

There are three unique things about this bird: the first is the brilliancy of the female, who is as highly coloured as her mate, but lacks the dark face; and the second that the young are as brightly coloured as their parents but, as in the female, lack the dark face; the third is the unique position in which the nest is placed, which in itself is a beautiful piece of work, being of an almost round shape, woven so well that it resembles basket work, and is lined with the unripe downy flowering heads of ropoka grass; the nest is always



1. Nests of Cabana's Weaver Bird.
2. Buff-backed Egret.

Sydney Porter.

[To face p. 270.]

woven of green grass, which of course dries after a time ; it is placed without exception at the extreme end of a slender branch from which all the leaves have been stripped with the exception of the end two, which are woven into the nest, either directly overhanging the water, especially over rivers which renders it quite inaccessible, or in the immediate vicinity of a hornet's nest, so that it is almost impossible to tamper with the nest without getting stung, and a hornet's sting, I may say for the benefit of those unacquainted with it, is no joke.

The eggs are from three to six in number, white finely spotted with red.

The song is the kind typical to the family, harsh and rasping. Near the homestead was a fowl pen in which was a plantation of young m'sarsa-trees about 20 feet high, and in these roosted a flock of Cabanis Weavers in company with other Finches, and the noise made by these birds singing in unison was incredible ; the females sang with equal gusto, and it was amazing the amount of energy that the birds put into this morning and evening song. If one was under the trees during this chorus it was impossible to hear oneself speak.

The superbly coloured Northern or Schalow's Green Fruit Pigeon (*Vinago schalowi*) is often seen, always in flocks of from six to twenty individuals, but never singly.

To really appreciate this bird one must see it in its natural haunts, in the tall dense trees, on kopjes, or in the wooded parts by the rivers. If one keeps perfectly quiet underneath one of their favourite trees they will come noiselessly and feed upon the fruit, evincing little fear, and can be observed for a considerable length of time.

While feeding their movements are remarkably Parrot-like, in fact the first time I saw one feeding at a distance I mistook it for a Parrot. They climb about the branches with great ease, sometimes hanging head downwards to reach a berry or fruit.

These birds harmonize wonderfully well with the surrounding foliage, especially when the sunlight is shining through the leaves.

In colour this Fruit Pigeon is a beautiful pale green of remarkable intensity, which fades upon death ; it is paler below than above, and on the hind neck is a patch of French grey ; the flight feathers, secondaries, and the greater wing-coverts black edged with yellow,

the flights faintly, the secondaries more so, and the coverts broadly striped. The shoulders rich maroon-grey; the legs, which are entirely feathered, are brilliant yellow, the lesser under tail-coverts green edged with white, and the larger ones chestnut edged with the same colour. The iris is of a remarkable pale blue, the base of the beak coral-red, the other half ivory-white, the feet coral-red.

Unfortunately this bird is held in great esteem by Europeans for the pot, and is consequently shot at every turn, so that it is remarkable that it is as common as it is when one considers that Fruit Pigeons are such slow breeders. Both male and female are alike in plumage. They live upon wild fruit and berries, principally the wild fig.

(To be continued.)

THE BREEDING OF THE MANY-COLOURED PARRAKEET (*PSEPHOTUS MULTICOLOR*)

By the MARQUESS OF TAVISTOCK

Some early writers have described the Many-colour as an almost hopelessly difficult bird to keep, dying from what they believed to be cerebral hæmorrhage owing to the lack of some natural food for which we are unable to supply any satisfactory equivalent. Later writers, on the other hand, have asserted that the Many-colour is as hardy and prolific as the Redrump. As a matter of fact, there is an element of truth and a great deal of error in both theories regarding this pretty Parrakeet. The Many-colour can be a most disheartening bird, but it does not die of cerebral hæmorrhage, and there is no sort of difficulty about its food. Although with patience, and a certain amount of luck in securing robust individuals, it can be acclimatized to the point of standing a winter in an unheated outdoor aviary. It is capable of giving rather more than the average amount of trouble in the matter of chills, is susceptible to tuberculosis, and more than susceptible to every form of septicæmia from the ordinary virulently infectious kind which causes yellow spots on the liver to the more subtle ultra-microscopic variety which enters the blood stream, kills birds singly, and gives rise to symptoms easily mistaken for cerebral hæmorrhage. If the Many-colour by reason of the good luck or good management of its

owner manages to escape the various diseases to which it is so exceedingly prone sufficiently long to arrive at the breeding season after a clean moult, it is certainly no less willing to nest than its cousin the Redrump but I wonder how many aviculturists who call the Many-colour a hardy bird can boast of having kept *the same pair* for shall we say eight or ten years, breeding from them successfully each season?

I have kept Many-colours on and off for more than ten years, for the most part in the usual fixed type of aviary. In Bedfordshire I had to give them up as hopeless as they never escaped tuberculosis or spotted liver septicæmia for more than a year. In the Isle of Wight they beat me by their proneness to the pseudo-cerebral hæmorrhage already referred to, and I had no better luck with them in Hampshire for a time. As a last resort I tried them last year in my new type of movable aviary with hanging shelters. The mortality at first was as heavy as ever, but at last it was from preventable causes. They no longer got infectious disease, but contracted chills from roosting in exposed places, or committed suicide by hanging themselves against the wire in night alarms. I therefore had an aviary made with an inner lining of string netting to the roof and end of the flight, and a closed shelter into which the birds were driven every night. Into this aviary I turned the best surviving pair. In late autumn the hen caught a cold, and I was obliged to put her for the winter in a roomy cage in the heated birdroom, but the cock survived the bad weather in the best of health and spirits. When May was well advanced I put up two nest-boxes in the shelter and turned the hen in with her mate, who was delighted to see her and very attentive. For a day or two she put on airs when he fed her, standing as far away from him as possible, and either biting him at the end of the operation or dashing away as though she was afraid he would bite her. Very soon, however, they were on the best of terms, and the cock kept trying to cajole or coerce her into the nest-box. During all this time the birds were shut up regularly each night, for my experience is that summer changes of temperature are more deadly than those of winter. In due course the eggs arrived, and late in July three young birds left the nest. Two of them—a cock and a hen—were very fine, but the third little

hen was more backward and less strong on the wing when she first came out of the shelter. It was pretty to see the concern of her parents when she blundered about and seemed in danger of hurting herself. As a precaution against accidents we put her back in the shelter, where she remained several days, and when she again emerged she was much better able to look after herself and she is now almost indistinguishable from her sister. The other two young birds were very quick to learn to go home to bed in the shelter through the small hole used for the purpose, and after the first two or three nights were as docile and easily managed as their parents. For a time the Many-colours were a very happy family. I have seen the young cock combing his sister's head feathers, while the latter performed the same kind office for her mother! The youngest hen was, and still is, the old cock's favourite, and he used to be amusingly firm in seeing that she got her fair share when he was feeding his offspring. If one of the bigger ones pushed in before he considered that she had had enough he absolutely ignored its demands and shifted his position until he could reach the baby again. One afternoon I noticed that the old hen seemed slightly out of sorts and was vomiting, but fortunately I took her in time and after a couple of days in the hospital she was well again, and I was able to put her in a cage in the birdroom until I had a suitable aviary vacant for her. It is a most important maxim in successful bird-keeping never to return a bird that has been ill to the same conditions as it was living under when it contracted the illness. If you do, it is ten to one that it will soon be ill again, and probably the second illness will be severe or fatal.

A few days ago the old cock began to get snappy with his son, so I moved the latter to a separate aviary. His sex had been apparent from the first, for although he had the red wing bar of the female plumage, his cheeks were green, and he had a yellow frontal band.

MR. WHITLEY'S COLLECTION

Mr. Herbert Whitley's zoological collection at Primley Hill, Paignton, Devonshire, is the largest private collection in the country, at least so far as the number of species is concerned. It comprises

mammals, birds, reptiles, and fish, the birds alone forming a wonderful series of the rarest species. The writer spent a very enjoyable day there recently, and feels that, as this collection is not so well known as it might be, a few notes on it will be acceptable to members of the Avicultural Society.

There are several ranges of aviaries, some entirely covered in with glass roofs, some with extensive outside flights; all are substantially built and mostly heated by hot-water pipes.

The first aviary we visited contained an example of the curious and unprepossessing New Guinea Crow (*Gymnocorax senex*), a fruit-eating species of great rarity. The second aviary contained four specimens of the very beautiful Pigmy Falcon (*Poliohierax semitorquatus*) from Abyssinia, which appeared to be in excellent condition, though it is certainly a difficult species. The next contained Senegal Rollers and a very beautiful purple-coloured Jay, probably *Cyanocorax violaceus*.

A large aviary, apparently partly formed out of a greenhouse, was tenanted by Touracous, Crowned Pigeons, and Glossy Starlings, not to mention a record pair of Leopard Tortoises.

A series of smaller aviaries contained Parrots, a wonderful series of Amazons—Lesson's (*lilacina*), Salvins, the Diadem, Spectacled, and others; a magnificent Hawk-headed Parrot; pairs of Greater and Lesser Vases; Eclectus—Grand, Cardinal and Red-sided; Yellow-billed and Blue-headed *Pionus*, Ruepell's and Brown-necked *Pæocephalus*. One aviary with a large grass enclosure contained quite a flock of Gouldians which had bred freely, usually during the winter months, and Mr. Whitley has discovered that the young are fed to a very large extent upon short tender blades of grass. If the grass is allowed to grow coarse failure is the result, but if kept cut so that the young shoots can be eaten success in rearing is assured, and the cold of winter does not seem to affect them. A large outside aviary contained White-faced Herons, and a beautiful grey-coloured Egret, while near by was a very fine South African Ground Hornbill. In another compartment was the finest pair of Abyssinian Ground Hornbills that one could wish to see anywhere, while a pair of White-necked Storks were nearly as perfect. In a large open paddock was a pair of Crested Screamers

(*Chauna*) with their newly-hatched chicks, jolly little fluffy yellow mites. The parents spend their lives with full powers of flight, and are often seen on the wing at a great height. They nested some distance away, and the hen and chicks were carried to the paddock nearer home, a few feathers of the hen's wing being cut. She settled down in the new place and was soon joined by her mate, and when I saw them they all looked most happy. Later on I saw the cock bird flying across the valley, and a fine sight he presented.

Kagus have nested on two occasions during the winter months, and although success has not quite been achieved there seems every prospect that young may be reared ere long. The nest was made under an inverted box, with one side broken away, in the wire enclosure of the aviary. One egg only is laid to a clutch, and on the first occasion the chick died in the shell. A second attempt was soon made, but on this occasion the chick died at hatching. So far as I know it is only in Australia that the Kagu has been bred in captivity, and there the seasons are the same as in its own country—New Caledonia. One became almost bewildered with all the rarities, and my notes were scanty and do not profess to include anything like all the good things that delight the heart of an aviculturist when he visits Primley. There was a pair of the rare Great-billed Raven (*Corvultur crassirostris*) from Abyssinia, the Leaden Crow Shrike from Australia, Beechey Jays from Mexico, Mot-mots and Lanceolated Jays, Scarlet Ibises, and a very beautiful Slaty Egret (*Leptorodius gularis*). One large thickly-planted aviary contained Roulroul Partridges, Cuban Thrushes, and Diuca Finches, and one would imagine all would breed, but for some reason or other it is an unlucky aviary and birds decline to breed there; they appear to do better in small aviaries, each containing one pair of birds. In such an aviary the beautiful Long-tailed Roller (*Coracias caudatus*) has nested and hatched, though the young died at ten days old. Just at the time of hatching the hen violently attacked the cock, though the reason for this behaviour is not clear. In another aviary a Burchell's Glossy Starling mated with a Red-winged Starling, and fertile eggs resulted. Red-collared Lorikeets have bred successfully, and I saw a beautiful mud nest of the Grey Struthidea formed on the top of a narrow beam. The birds were most attentive to one another

and to the nest, but no eggs had been laid at the time of my visit. A pair of Barn Owls were diligently rearing young in one of the aviaries.

Two small Cockatoos were particularly interesting, for their species has not been determined. They are the size of the Lesser Sulphur-crest, but obviously quite distinct from this. They lack the yellow on the cheeks and have smaller bills. They are in fact small images of the Greater Sulphur-crested Cockatoo.

Red-collared Lorikeets have bred successfully, and so have Glossy Starlings, but the species of the latter is a little uncertain.



I was greatly interested in a pair of young Red Mountain Doves (*Geotrygon montana*) which Mr. Whitley showed me in the nest, and here I think Mr. Whitley has made an important discovery. These nestlings possessed, besides the egg-tooth on the upper mandible, a similar but sharper tooth or hook on the lower mandible. I made a rough sketch of the head of one of the squabs at the time, and reproduce it herewith. Whether this hook is used to enable the nestling to get a hold with its bill to the inside of the parent's bill during the feeding process, or whether it is for purposes of climbing is uncertain, but if the bill is held in one's hand the sharp little hook is very distinctly felt to catch on to one's skin.

I must not omit to mention a fine pair of the African Black Pie or Piapec, and three splendid Cassowaries, one belonging to a species that we could not determine; nor must I forget the fine series of raptorial birds, including the Angolian Vulture, Vociferous Sea Eagle, Jackal and Common Buzzards, Black and Turkey Vultures, and Virginian Eagle Owls.

A flock of some ten Emus, old and young, occupy a large paddock, while Cranes of several species wander in semi-freedom, and on the large pond may be seen a great variety of Waterfowl.

And when one has seen this fine collection of foreign birds, of which I have not mentioned nearly all, there is still a remarkable series of domestic birds and mammals and a collection of wild animals containing many species—but this is not a story for these pages.

D. S-S.

THE NESTING OF THE MEXICAN ROSE-FINCH (*CARPODACUS MEXICANUS*)

By W. SHORE-BAILY

About three years ago, a London dealer wrote me that he had a pair of South American Finches that he had shown to two or three well-known ornithologists, who were all unable to put a name to them, and asked me if I would care to have them. This sounded interesting, and as the price asked was reasonable I decided to have them and see if I could win another medal. On their arrival I was rather disappointed, as they were extremely plain-looking little birds, about the size of our Chaffinch. The general colour was greyish-brown, the forehead, throat, and a patch on the rump brick-red. After a while I found that one of them had a very good voice, not unlike that of some Canaries that I have kept. They were, however, always quarrelling and I began to suspect that I had got two males. This was rather confirmed in the following seasons, as no attempt was made at nest-building, and one bird was always chasing the other. Last summer our member, Dr. Hopkinson, honoured me with a visit, and he at once pronounced them to be Mexican Rose-finches (*Carpodacus mexicanus*), and that my birds were both males, so my hopes of breeding them were at once knocked on the head.

On visiting Chapman's one day this spring I was surprised to see a whole cage full of these birds that had just been landed from Mexico. Amongst them was one bird without the red forehead and throat, and this one I promptly secured. On introducing it to one of my males his delight was immense, and I thought that he would burst his throat in his singing efforts. Very shortly afterwards they went to nest, building at the very top of a conifer, close under the wire of the aviary. The nest was cup-shaped, made of roots and moss, and lined with a

few feathers. The four eggs were pale bluish-green, with a few widely scattered buff spots. The nest was very much exposed, and, as I feared, the first heavy rainfall drowned them out. However, this didn't daunt them, and very soon they had made another nest in a much more sheltered position. This time two young ones were hatched after an incubation period of thirteen days. Both birds fed the young, apparently principally upon seed. The only artificial food provided was soaked bread. Twelve days later they both left the nest, but for nearly a week kept themselves hidden in the bushes. As far as I can see without handling, they are exactly like the mother. The red throat and forehead will, I presume, not appear until after their first moult.

THE COLIES

By J. DELACOUR

The Colies (*Coliidae*) are a small African family consisting of one genus. They are little birds about the size of Larks, with moderate-sized beaks, the head covered with a long slender crest; short wings, very long tail; their four toes are all directed forward, only the first one is able to be brought back. They live in trees in flocks; they have a curious habit of suspending themselves from the branches, with their bodies hanging below and on one side. They build cup-shaped nests in bushes.

Colies are entirely fruit eaters and do very well in confinement on the ordinary diet of such birds. But they are timid, stupid, and dirty, and are not interesting in spite of their shape and curious habits. They are fairly often imported, and the following have been on sale in Europe and some even have nested.

Colius striatus from the Cape, brown varied with grey and striped with dark tawny, and *C. nigricollis* from the Congo are almost alike, but the latter has a black throat and forehead.

C. leucotis from Abyssinnia differs in having whitish cheeks.

C. castanonotus from Western Africa, chestnut chocolate above, yellow beneath, with the front of the head black powdered white, and rosy grey cheeks.

C. colius, lilac grey, with a spot outlined with black on the back and yellow abdomen.

C. erythromelon from South Africa, pale greenish grey above, tawny underneath.

C. macrurus from Eastern and Western Africa, which is a pale edition of the preceding, but has two blue tufts at the back of the neck.

CUCKOOS

By J. DELACOUR and M. LEGENDRE

Everybody knows our European Cuckoo, its unique song and parasitic habits ; it is one of a very numerous family which embraces birds varying from the size of a Lark to that of a Crow, and which is spread all over the world. Nearly all Cuckoos are insectivorous, and have more or less powerful, slightly curved beaks. They may be divided into two groups : Cuckoos proper (*Cuculinae*) and Coucals (*Centropodinae*). The first mentioned are arboreal, have slender beaks, long wings, the tail rather poorly developed, and short legs. They are parasitic, laying their eggs in other birds' nests. The second group have strong beaks, long legs, short wings, and long tails ; they are ground birds, and bring up their own young.

Many Cuckoos are pretty but modest in colouring, only the Emerald Cuckoos (*Chrysococcyx*) have beautiful metallic colouring, but they have not yet been kept in confinement. They are not much to be recommended to aviary keepers, and are accordingly not often imported. We may add that they are hard to keep alive, for they will only eat living insects and balls of meat rolled in powdered insects or grated breadcrumbs.

The Coucals make the best aviary birds, and although their colouring is not showy, they are elegant and live well on an insectivorous mixture and a little meat.

The genus *Cuculus* comprises birds which have the following characteristics : a large beak, rather depressed at its base and not as long as the head ; wings long and subobtuse ; tail graduated, rounded, short tarsus almost entirely feathered. A little bare space round the eyes.



1/4

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Red-cheeked Coby
(*Colius erythromelon*)

Tawny Frogmouth
(*Podargus strigoides*)

Hoopoe
(*Upupa epops*)

Laughing Kingfisher
(*Dacelo gigas*)

White-browed Coucal
(*Centropus superciliosus*)

The Common Grey Cuckoo (*Cuculus canorus*) is as big as a male Sparrow Hawk; it has a similar flight, and when seen from below, with his ashen grey breast marked with transverse black stripes, it is sometimes taken for that bird. Indeed, in some countries the peasants think and declare that the Cuckoo in its second year turns into a Sparrow Hawk! To define its plumage, the upper part of the body, neck and breast are ashy blue; the belly, thighs, abdomen and lower tail-coverts whitish with transverse blackish-brown stripes; the webs of the tail feathers blackish with a few small white spots. The edges of the beak and rims of the eyes are orange yellow. The immature plumage or a more or less faulty moult have for a long time given rise to belief in a distinct species.

The Cuckoo reaches Europe about the first week in April, and spreads immediately through woods and coppices by the sides of fields. It feeds almost exclusively on insects, grasshoppers, crickets, cockchafers; and above all on hairy caterpillars, which nearly all other birds refuse; to these delicacies it adds a little fruit. Being of a solitary and distrustful nature, it is generally observed perching, for it is awkward on the ground, only advancing by hops. It prefers to fly even short distances. The call of the male bird is the well-known "Cuckoo" which so delights the ear in the spring. In mild, clear weather he calls most often in the evening, repeating without a pause. He perches meanwhile on a bough and each time, raising his long tail, he sings through the fine summer nights with great ardour, for he seems to rest in the daytime, and at times leads a practically nocturnal life.

The nesting habits of the Cuckoo were mysterious to us, and on this subject alone if all the writings ancient and modern were collected they would make a large book, and we may agree with Toussenel, who so truly wrote "The history of the Cuckoo is one of the most interesting in the whole animal kingdom". Facts mount up, true, manifold, and dissimilar from laying the egg till the young are fully reared. One cannot but think that often the bird must act from an individual impulse according to the circumstances which present themselves, and does not simply obey a general rule common to all the species. We will simply say here that the Cuckoo distributes her eggs singly

among the nests of Passeres who incubate them and undertake the rearing of the young Cuckoos. Before its departure towards the end of September the Cuckoo becomes quite fat, which is contrary to the proverb, "Thin as a Cuckoo."

It is found throughout Europe in summer except the extreme north, Africa, and the West of Asia.

An example of the African *Cuculus solitarius* has lived for some months in the London Zoological Gardens.

The Crested Cuckoo (*Coccyzus glandarius*) or Cuckoo Jay. Both male and female of this rare species have the crown and sides of the head ashy grey streaked with black, the upper surface greyish brown with a slight greenish lustre. Underneath yellowish-white, the sides shading into grey; wings greyish-brown tipped with white. Beak brownish-black. This bird has not altogether the same habits as the Cuckoo, and is more sociable; its infrequent appearances in France are always made in small troops. Its flight is rapid and light, it is not difficult to approach, and moves from branch to branch, raising its crest; it does not often settle on to the ground. Its voice is not like the Cuckoo's, it is a sort of titter like that of the Magpie. It also lays eggs in other birds' nests, especially those of Crows and Magpies. This bird is a native of South and South-West Europe, Africa, and the West of Asia. It is an accidental visitor to Central Europe as far as England. It sometimes appears in the South of France, where it has been taken in several places. It was proved to have bred there in 1884, when a young bird was caught which had fallen from the nest.

The *Coccyzus* is exclusively American. Two species have been accidental visitors to Europe. These birds build nests and incubate their eggs. Their characteristics are a strong beak higher than wide at its base, and as long as the head. Wings subobtusely, the tips reaching to the middle of the tail, which is long and graduated.

American Cuckoo (*Coccyzus americanus*) is olive-grey with greenish metallic reflections on the upper parts; underneath it is yellowish-white with the sides shading into grey. This species is confined to Central and Southern America between which it migrates annually. Commonly known as Rain Cuckoo, it collects into large companies which betake

themselves southward. A very rare accidental visitor to the West of Europe, it has been taken in England, France, Belgium, and Italy.

The Red-eyed Cuckoo (*Coccyzus erythrophthalmus*). In this bird both sexes have the upper part of the body metallic olive-green with the front of the head slate-grey. Below white with yellowish breast, and the sides of the neck grey. Bare space round the eyes vermillion. This American species was once captured in England, 1871, and another time in Italy.

The Cuckoo is not interesting in captivity ; it would only be reared as a curiosity, for it has no desirable qualities as an aviary bird. It is not wild, but it seems sulky, melancholy, its movements are ungraceful, and it is exceedingly voracious. It must be kept in a large aviary, because in a moderately-sized cage it very soon soils its plumage, which appears to be rather delicate. Its food should consist of insectile mixture, meat, and a few large insects. The last Cuckoo we kept in confinement was found in a public garden in Paris ; it was a young bird which had escaped from a cage, for it was very tame and quite well understood how to ask for food.

The Jay Cuckoo is said by those who have kept it in their aviaries to be much more interesting ; it requires the same food, but is much more lively and active, which preserves that elegant shape which the Cuckoo sometimes loses.

We will only quote briefly such exotic Cuckoos as have been imported :—

Hierococcyx varius from India resembles a Sparrow Hawk.

The Koël (*Eudynamis honorata*), very common in India and Indo-China ; the male is black, the female striped black and white. I have kept several examples in an aviary in Annam ; they are partly frugivorous.

Urodynamis traitensis is allied to it ; it comes from the Pacific Islands ; it is marked with dark brown, red and white.

Coucals properly so called (*Centropus*) live on the ground or in bushes, and are usually very common. Many species are chestnut, with head, neck and under parts more or less pure black ; others have these parts streaked white on a brown ground. *C. sinensis* from Asia belongs to the first category ; and *C. senegalensis*, *monachus*, *super-*

ciliolus from Africa to the second ; as for the large *C. phasianus* from Australia, or Crow Pheasant, its head and breast are black, back wings and tail tawny rayed with brown. All, or almost all, have ruby red eyes. The legs are long and strong, and the hind toes are prolonged by a very long and straight claw.

Saurothera vetula, from Jamaica, is somewhat like the above, but has not the long claw ; it is brown, paler underneath.

The *Carpococcyx* are handsome, large Ground Cuckoos found in Sumatra, Borneo, and Indo-China. *C. radiatus* from Borneo, which has been kept in London, is dark green above, grey streaked with black below ; head violet-black ; *C. renauldi* is a very rare bird from Annam and Siam, grey above, pale yellow below, with head, neck, breast and tail bronzy-black. In Annam I kept the only seven specimens yet met with alive for a fortnight.

Geococcyx mexicanus is another large Ground Cuckoo which has olive-green and white plumage, the belly being of the latter colour ; it is a native of North America.

The Guira (*Guira guira*) is another American Cuckoo from the Argentine, with tawny and chestnut plumage. It has been bred in England.

Lastly we will mention the Ani (*Crotophaga*), a black bird with metallic spots and large swollen beak. They live among the cattle, which they relieve of their ticks, and nest gregariously, several females uniting for incubation. They are found in all parts of tropical America.

TOURACOUS

By J. DELACOUR.

There are perhaps birds of more magnificent plumage than the Touracous, but to my mind none more entirely desirable ; most of them possess all the qualities which one requires in an aviary bird. Their shape is perfect, their plumage enchanting ; their character tame and gentle ; they live long without special care, and, with me at any rate, breed freely. I own that Touracous are the birds which I like best of all.

Touracous are purely African birds. In South Africa they are

called "Louries", and in West Africa "Clock Birds". They are fairly large, ranging from the size of a Magpie to that of a Pheasant; their feet are short but their toes fairly long, two are turned to the back and the fourth, the outside one, can be turned either one way or the other indifferently. More often they have small short beaks, but some are thick and arched; the head is adorned with a thick crest, the wings are rounded, the tail long and wide, the plumage is very delicate.

The male and female are alike, but the former is usually distinguishable by his superior size and stronger beak.

Touracous are arboreal and live in forests; they move along the branches with an ease which reminds one of Squirrels. They are vegetarians, living chiefly on fruit and leaves, occasionally a few worms or insects, but many of them do not care about these. Their resounding call sounds like a loud coo, short and often repeated; they also utter a low grunt.

These birds build large nests of twigs like those of certain Pigeons, and it has been said that they lay as many as five eggs. My experience with Touracous in confinement is that they invariably lay two eggs. Fraser's Touracou, which nested with Mr. Johnstone, and the Rose-crested Touracou from both of which Mr. Astley obtained eggs, all laid two eggs in large baskets.

With me at Villers-Bretonneux, where I reared during several years and to the third generation Senegal Touracous, they always nested in large boxes provided with an open front. Besides the cases mentioned above, no other Touracous have been bred in an aviary. The young are covered with black down, and are remarkable for having claws on their wings, which disappear after a time.

Touracous must be given large aviaries, for they are active, and their beauty—when in flight they display all the splendour of their scarlet wings—makes it worth while to indulge them. From October to April they should be given moderate heat, but they are not delicate. For food I have found them do satisfactorily on fruit, especially apples, bananas, cooked rice and potato, raisins, and dried figs. They also eat leaves. All my young birds were reared on this diet.

Unfortunately, Touracous are rarely imported and command

high prices ; I have only lately been able, after ceaseless endeavour, to obtain a pair to replace my three breeding pairs which I lost in the destruction of my birds in 1918 at Villers-Bretonneux.

The most numerous and prettiest of the family are the Green Touracous (*Turacus*) ; they are also the smallest, more or less the size of a Magpie. All the species resemble each other : their general colour is green, with wings and tail violet or green shot purple, and carmine flights ; this beautiful colour is made of a special pigment which is said to be soluble in water ; the head and crest are marked with either white or pink ; the crest is high and covers all the head ; the whole base of the beak is hidden by feathers. Several kinds have been imported.

The Senegal Touracou (*T. persa*) is a native of West Africa. It is green with purple violet wings and tail ; the crest is green, slightly pink at the tip ; the lores black ; a white line passes below the eye, another in front and before it, the skin round the eye is red.

I reproduce here what I previously published concerning these delightful birds :—

“ In the spring of 1914 our colleague, M. Robert Pauvels, consented to sell me the pair of these birds which he had kept after the sale of his superb collection at Everberghe (Belgium). They were brought to me in the month of May at Villers-Bretonneux. They had lived several years in Belgium, but never laid. I placed them in an outdoor aviary, 12 metres long by 4 wide, planted with shrubs and enclosed by walls on the north, east, and west. In the centre of the north wall was a glass shelter of 2×1 metre. Under this shelter I arranged a covered box with an entrance hole of about 50 square centimetres.

“ The Touracous at once made themselves at home in their new abode and frequented the box, where they passed the night.

“ The beginning of June, on visiting them, I found two large white round eggs about as big as a Golden Pheasant's laid on some wisps of hay roughly put together. I was charmed with this discovery, all the more so because the male and female incubated steadily, and at the end of eighteen days I saw two nestlings hatch out covered with black down. My joy did not last long. At the end of eighteen days

I found the corpse of one nestling thrown out underneath the nest, and on the morrow the second.

“ Two days later the female had laid again in the same nest, which had been kept very clean, and the second incubation began ; two young hatched out the end of July, and they also were killed and thrown out by their parents. I despaired then of rearing these birds, which seemed to have the same fault of so many exotic birds, which is the most serious impediment to their reproduction in aviaries : the exaggerated ardour of the male, who kills the young after one or two weeks so as to start a fresh nest.

“ I was mobilized from 1st August, and thought no more of the Touracous until my mother, who busied herself actively with my birds in my absence, wrote to me that a young Touracou had been born the 1st September, during the German occupation, and that its parents this time were rearing it well !

“ The season was advanced, the breeding fever of the male had cooled down, and he no longer troubled about reproduction. The young one lived two and a half months, but it was rickety, its feet were defective, and it died the beginning of November, when the pair of Touracous were taken indoors to a heated aviary, where they passed the winter.

“ My mother had them put back in their open-air aviary at the end of April, 1915. They lost no time in building their nest in the box ; two young hatched out during June, and were quickly killed off by their parents. On 23rd July they laid again, and two more young appeared the 10th to 12th August. This time my mother intended to take the young birds when they reached the age of twenty days and bring them up by hand.

“ She watched them most carefully to prevent their murder. But this time the birds reared their young perfectly, and on 5th September one left the nest and was found perching on the branch of a shrub. It was still small and covered with black down, nevertheless the black wing feathers were sufficiently developed for it to fly. At night, however, the youngster was replaced in its nest, whence it came out every morning. The other nestling, which was weaker, did not emerge. It had malformed feet, and died when two months old.

"The first one progressed rapidly and seemed always in perfect health; on 20th September its crest began to show, black feathers gradually replaced the down, and some red feathers appeared in the wings. By 10th October it was two-thirds as big as its parents, its crest was larger and turned green, but there was neither red nor white about its eyes. The red circle round the eyes appeared on 15th October. It was turned into the heated aviary with its parents on 20th October, and on the 24th the white lines showed near the eyelids. By 24th December it resembled its parents save that it was a very little smaller, its crest not quite as thick and colours not quite as brilliant. By the end of January, 1916, even these differences had disappeared.

"The young Touracou began to feed itself at the end of September, but its parents still tended it devotedly.

"It was separated from them in May, 1916, when the old pair were again turned out of doors.

"In 1916 the Touracous had a brood in June, and killed their young as before; then a second brood was hatched on 20th July. One young one died at the end of fifteen days. The second was healthy and grew up as the one of the previous year.

"In 1918 two more young were reared, one by the old pair, the other by the young hen reared in 1915 and an imported cock. All these Touracous had the same food: potato, bananas cut into small cubes, and raisins, no insects nor any kind of animal food, and no other kind of fruit. On this diet only the old birds reared their young, which I believe they nourish after the fashion of Pigeons."

Buffon's Touracou (*T. buffoni*) from the same regions as the above is distinguished only by the absence of the white line under the eye; it is doubtful if it be really a distinct species.

Schalow's Touracou (*T. schalowi*) from South-East Africa is distinguished from the Senegal Touracou by its long crest, tipped with white, and its dark green wings shot with blue.

Livingstone's Touracou (*T. livingstoni*) differs only in having a greener tail. It is West African. *T. hybridus* from Nyassaland is also very closely related.

The Lourie Touracou (*T. corythaix*) from South Africa is like the



PINK CRESTED TOURACOU

above; it has the two marks on the face and the edge of the crest white; wings and tail bronzy green. This species nested with Mr. Astley, but the young did not live.

Fraser's Touracou (*T. macrorhynchus*) from West Africa wears a green crest with a white band and a terminal black band; it has only one white mark on the face under the eye. The whole back, wings and tail are purple-violet. It has been bred in England.

The Pink-crested Touracou (*T. erythrolophus*) comes from the same locality; it is slightly smaller, its face and chin are white, crest and nape bright pink; the former tipped with white; the wings, back, and tail are bronzy-green. It nested with Mr. Astley, but the young could not be reared. We reproduce a photograph of this bird taken by Mr. Seth-Smith in the London Zoological Gardens.

Donaldson's Touracou (*T. donaldsoni*), a very beautiful species from North-East Africa, has been recently imported in considerable numbers.

The genus *Gallirex* contains two species, distinguished from those of the genus *Turacus* by the beak being freer; like them their flight feathers are beautiful carmine-red. Two species of the genus have been imported: the Purple-crested Touracou (*G. porphyreolophus*) from Southern Africa, which is entirely dark green shot with violet, except the neck and front of the breast, which are light green shot with rose colour; and *G. chlorochlamys* from East Africa, which is only distinguished by having a pure green neck.

The Grey Touracous (*Chizorhis*) are much plainer than the species described hitherto. *C. concolor* from South Africa is uniform ashy-grey; it was freely imported some years ago, and I owned several, but found them dull and uninteresting. *C. africana*, a large grey bird marked with black above, white striped black underneath, and having a brown head, was also imported. It comes from East Africa.

The Plantain-eaters (*Musophaea*) are large Touracous with strong yellow bills prolonged by a little helmet. Their plumage is metallic violet with the top of the head carmine-red as well as the flights; both species of the genus have been imported; *M. violacea* from Senegambia, which has a very short crest and a white line under the eye; and *M. rossæ* from Angola and the Congo, with a more developed crest, and without the white line on the face.

Lastly I will mention the Giant Touracou (*Corythæola cristata*) from Angola and the Congo. I owned the only specimen which ever came over to us. This splendid bird is the size of a large Pheasant; the neck, back, and wings are pale blue, the breast yellowish-green, the belly chestnut, the median tail feathers are blue, the others pale yellow, all finished off by a wide black band; the head is whitish-grey, and carries a large black crest, the long curved beak is yellow, the tip red.

In my opinion the peculiar Hoatzin (*Opisthocomus hoazin*), which is to be met with in the hot parts of South America, is related to the Touracous, to whom it bears a faint resemblance, although it is heavy, awkward, and slow. Young birds have well-developed claws on their wings and use them in climbing; they swim and dive equally well.

These birds always live by the side of rivers on trees overhanging the water, and spend their lives there feeding on leaves and building Pigeon-like nests. They are as big as a Pheasant, brown streaked with white, with a large slender crest.

I had the opportunity of seeing Hoatzins at close quarters on the Apure in Venezuela, and in Guiana, and they are really most curious birds, not timid. Mr. Beebe, who has made a close study of them, considers them ugly and grotesque. I, on the contrary, think they are curious, even handsome. No living Hoatzin has yet reached Europe, but their importation is not impossible, for individuals have lived in confinement in British Guiana, fed at first on different kinds of leaves and then on lettuce and cabbage, which they eat readily and which suits them very well.

CORRESPONDENCE

INTELLIGENCE OF BARRABAND PARRAKEETS

SIR,—I have been rather struck by the care and intelligence displayed by one of my cock Barrabands in training his offspring to understand the construction of the aviary. All my cock Barrabands, old and young, are kept at liberty out of the breeding season, but as a protection against Owls are trained to re-enter an aviary each evening through a small door low down in the front end. This door, by reason of its

size and position, is not at all readily found by an untrained bird, especially from the inside, but the trained ones know all about it and fly straight down on to the bracket holding the food dish and out through the opening directly the door is opened in the morning. Some even fly straight through the small hole without settling at all, but untrained birds fly backwards and forwards among the upper perches. The bird about which I am writing has one son a few months old, who, having found his way into the night aviary, experiences considerable difficulty in discovering the exit. For several days, when I opened the little door in the morning, his father, in place of flying on to the bracket and then out, would climb down the wire from one of the top perches and climb into the open doorway. He would then turn round and address some remarks to his child, obviously calling his attention to the lesson, after which he would climb back again and repeat the whole process once more. Then, as his son remained stupidly indifferent, he would lose patience and fly off for the day, evidently thinking he had done his best for the silly child! I thought that the old cock showed something more than mere instinct, for not only was he trying to teach his offspring about something quite outside the natural experience of his race, but he even seemed to be aware that the young bird, though as fast and strong on the wing as himself, when free would more easily find his way to the awkward and obscure opening by *climbing* down to it than by *flying* down to it, as he did himself. It is, in fact, always by climbing to it that young Barrabands first learn the secret of the little door.

TAVISTOCK.

THE DISPLAY OF THE ZEBRA DOVE

SIR,—I have seen no record of the very pretty display of the male of this little Dove. The other day I was looking at my birds, when suddenly the male started bowing to the female and spreading his tail up like a Fan-tailed Pigeon, but much prettier; when the tail was up it formed a long oval fan of grey with white dots or eyes all along the edge, finishing off with the black tips of the tail feathers. It was a pretty sight, and I hope it will prove attractive to the hen; so far

she has not looked at a nesting-box, of which there are a number in her aviary.

W. H. WORKMAN.

BELFAST.

UPS AND DOWNS OF THE BREEDING SEASON

SIR,—Now that the breeding season is over, I should like to relate some of my successes and failures, the latter being such as the aviculturist meets with during a season, especially when he is trying to breed with fresh imported birds so as to be first on the field to succeed in breeding some bird or other that has not been bred in an English aviary before.

Starting with my successes—I have bred this year the Green, Olive, Yellow and Blue Budgerigar in plenty; Peach-faced Lovebird, five young; Black-cheeked Lovebirds, nine young; Cockatiels, five young; Redrump, three young; Orange-flanked Parrakeets, five young, two killed when about ten days old; Abyssinian Lovebirds, four young, only two reared; and I think if the summer weather had only lasted a little longer I should have been able to add the Tuipara Parrakeet to my list, but alas, they did not come into my hands until late in the season, and by the time a nest box had been chosen and they were thinking of nesting seriously, the cold weather started, and I would not chance such little rarities and gems to the cold and risks of egg-binding, but am hoping for better results with them next year.

Now for failures. The birds that I have been unable to do anything with are: Blue-headed *Pionus*, a cock Black-headed Caique mated to a hen Yellow-headed Caique, Blossom-headed Parrakeet, Senegal and Meyers Parrots, Blue-winged and Madagascar Lovebirds.

These have all teased me throughout the year. Each pair took to a nest, fed each other, were in and out the box all day, sleeping in it at night, and Heaven help an intruder, and after all this my hopes went west, as only one bird of this lot even condescended to lay. That was the Blossom-head, but she would not sit, and a Cockatiel would not oblige by taking the eggs.

Hoping to hear through our Magazine of breeders and their successes, which I think are always of general interest.

W. LEWIS.

PUNCH ON AVICULTURE

SIR,—May we hope to have *Punch* as a competitor in the avicultural line? In the issue of 9th September a whole column bears the heading “Avicultural Notes”, and deals with birds, mostly foreign, and their needs, real or supposed. A year or two ago a Red Cardinal had almost a page to himself in Mr. Punch’s priceless pages, and now we can read there of Cutthroats and Paradise Whydahs. My Budgerigar is turning blue with jealousy.

E. HOPKINSON.

HYBRID ADELAIDE AND PENNANT PARRAKEETS

SIR,—It may interest some of the members of the Avicultural Society to hear of the breeding of some hybrids that has lately taken place this summer in my aviaries. I had a pair of Adelaides and an odd Pennant hen; the cock Adelaide paired with the Pennant, and would have nothing to do with the Adelaide hen, so when I saw this I took away the Adelaide hen, and immediately the Pennant went into the nesting box, laid three eggs, and hatched three nice young birds, which are all now flying about and very healthy. They are very like young Pennants, and I expect it will be interesting when they moult to see which type they most favour. The curious thing about them is that they are so much smaller than the parent birds.

L. REGINALD WAUD.

REVIEWS

THORBURN’S *BRITISH BIRDS*¹

In the June number of our Magazine appeared a review of the first volume of Mr. Thorburn’s entirely new book on British Birds, and the second volume has now appeared and fully maintains the high standard set up in Vol. I. It deals with the remaining part of the order Passeres, and with the orders Picariæ, Striges, Accipitres, Steganopodes, and Herodiones. There are 130 pages of letterpress, and no less than forty-eight coloured plates. With regard to the former, some may consider the

¹ *British Birds*, by Archibald Thorburn, F.Z.S. New edition in four volumes, with 192 plates in colour. Vol. II. Price, 16s. net. London: Longmans, Green & Co.

author slightly behind the times in his nomenclature ; for instance, he retains the name of *Cypselus apus* for the Swift, and that of *Dendrocopus major* for the Greater Spotted Woodpecker, names that we have all known from our youth, instead of employing the new ones of *Apus apus* and *Dryobates major anglicus*. When one is reviewing the birds of a continent or of the world it is necessary to employ trinomial nomenclature in order to differentiate the various geographical races, but in a popular book confined to purely British birds the old familiar names are best, and we think Mr. Thorburn's method will commend itself to the ordinary bird-lover. A short, concise, and up-to-date account of each species, occupying a page or so, gives all the information that one requires. How up-to-date the letterpress is may be judged from the account of the Cuckoo in which Mr. Edgar Chance's quite recent observations of its laying habits are cited. But the great value of the book lies in its illustrations. Howard Saunders and others have given us admirable books on British Birds, but their wood-cut illustrations were not sufficient to allow of accurate identification, and the only works with coloured plates were excessively expensive. Mr. Thorburn has illustrated almost every species with coloured plates that can only be described as superb, exquisite drawings having been most admirably reproduced. Certainly never before has such a beautiful book on birds been produced at such a very moderate price. The work will be completed in four volumes, each containing forty-eight coloured plates.

D. S.S.

DIE GEFIEDERTE WELT

The German avicultural journal, *Die Gefiederte Welt*, is a really wonderful production in all ways. It goes on year after year (it is now in its 54th) always the same, that is, full of interesting and instructive articles (often illustrated) and notes on birds and bird matters, and yet ever varying. It flourishes, too (perhaps the greatest wonder), with scarcely a mention of the Canary, and with advertisements occupying only about 25 per cent of its pages, instead of the 50 or more which, together with about the same amount of Canary matter, seems essential to the existence of a similar paper with us.

Another remarkable point about the *Die Gefiederte Welt* is the fact

that during its 54 years' life it has only had two editors. It was founded by Dr. Karl Russ and edited by him for many, many years, to be succeeded by his friend, Karl Neunzig, who now holds the reins and carries on the excellent tradition of the founder.

Among the many excellent articles which have appeared during the last two months, one of the most interesting perhaps is the Editor's review of new arrivals and rarely imported species, which is still "to be continued". Among the birds described are several Woodpeckers, *Celeus flavescens* (a number imported in 1924 and once at least previously—1877), *Chloronerpes flavinucha* (Mr. Astley's bird, AVIC. MAG., 1924), and *Brachypternus aurantius* (Berlin Zoo, 1905). Full accounts of all these are given with illustrations of some, and the article deals with a number of other birds, of which there is only space to mention the "new" Donaldson's Turaco, a variety of Toucans, and among smaller birds, Emins Weaver (*Othyphantes emini*). Have any of the last reached England yet? Among "new to aviculture" birds, it will be noticed that Herr Neunzig includes *Uraeginthus bengalus schoenus* Neum., *Lagonosticta senegala carlo* Zedl., *Aidemosyne cantans orientalis* Lor. and Hellm., all East African races of common West African "Waxbills". Alas! Are sub-species to invade Aviculture and constitute new records?

Besides the longer articles, every week's issue contains a number of "Notes", Answers and Queries, and four to six illustrations mostly of the rarer species. Once a quarter a coloured plate is issued, and all for 1.50 marks a month.

E. H.

THE IMPORTATION OF AUSTRALIAN BIRDS

Although the exportation of birds from Australia for trade purposes is now prohibited, we understand that the authorities concerned are quite willing to allow a limited number of birds to be exported if these are destined for Zoological Gardens or recognized avicultural or scientific societies. The scandalous way in which birds were at one time imported in huge numbers and allowed to remain for long periods in insanitary cages in the unwholesome atmosphere of dealers' shops has been, very wisely, stopped.

There is no doubt that permission would be given to the Avicultural Society to import certain Australian birds for the private collections of its members, but the transport of such birds would be a difficulty. They would have to be accompanied by some experienced person who would give them every attention during the voyage, and it is difficult to see how the Society could arrange for this, but we understand that Mr. Chapman, of 17 Tottenham Court Road, London, W. 1, has obtained permission to import a limited number of such birds, providing these are destined solely for Zoological Gardens or for the private collections of members of the Avicultural Society, and that he proposes, very shortly to send out one or two experienced persons to collect and bring home a collection. But before doing so he must receive definite orders, accompanied by an undertaking that the required birds, or other Australian animals, are solely for the collection of the member ordering them, and are not to be used for trade purposes. We would strongly advise our members to take advantage of this opportunity.

D. S-S.

ELECTION OF OFFICERS

The Council propose the election of the following :—

As President : Alfred Ezra, O.B.E.

„ Editor : D. Seth-Smith.

„ Auditor : J. B. Housden.

„ Scrutineer : G. Tyrwhitt Drake.

They also propose the following members for election to the Council :—

The Marquess of Tavistock.

Bernard C. Thomasset.

MEDALS AND CERTIFICATES

The Council has decided that from January, 1926, any member of the Society who succeeds in breeding any species of bird for *the first time in Europe* shall receive a special certificate in addition to the medal which is granted for the breeding of any species for the first time in the British Isles.

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All interested should apply immediately for a complete list, as the demand for same will undoubtedly be large and immediate.

At the present time we have our Collectors at work in Australia, the Malay States, Burma, India, the Transvaal, Northern Rhodesia, British East Africa, Abyssinia, Pernambuco, Para, Bahia, Trinidad and Mexico, from which we shall very shortly be receiving unrivalled collections of both Birds and Animals.

We shall be receiving, during the month of December, shipments from :—

BRAZIL : comprising collections of **Macaws, Tanagers, Hawk-headed, Dusky Blue-fronted and other Parrots, Waterfowl of various species, Conures, Giant Anteaters, Marmoset, Wooley and Capuchin Monkeys, Ocelot Cats, etc., etc.** One Specimen of the **WHITE GIANT ANTEATER** has been secured—a unique specimen. **Jarorou Stork, 10 Trumpeters, 1 Tapir.**

TRINIDAD and the ORINICO RIVER. Here our collector has succeeded in securing an unrivalled collection of over **500 Soft-billed Birds**, including many species which will probably be seen alive in this country for the very first time.

ABYSSINIA. Our two collectors are returning with a consignment of local fauna including **LIONS, LEOPARDS, ANTELOPES, HYENAS, CHEETAHS, OSTRICHES, TOURACOS**, and over **4,000 specimens of other Birds.**

SOUTH AFRICA. **17 Zebras, 19 Waterbuck, 5 Sable Antelopes, 3 Blesbok, 3 Blue Wildebeests, Chacma Baboons**, and a magnificent collection of over **850 African Birds of all varieties.**

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MEXICO. Our representative about the 14th of the month with a very fine transport of Mexican Animals and Birds, including **Kinkajous, Woolly, Spider and Marmozet Monkeys, Military, etc. Macaws, Tanagers, etc., etc.**

CANADA. **12 Black Bears, 10 Geese, 9 Porcupines, 1 Elk.**

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TWO ABYSSINIAN STARLINGS

By ALFRED EZRA, O.B.E.

In the last two or three years our stock of foreign aviary birds has been greatly increased by importations of Abyssinian species, among which two of the most beautiful are the Royal and Superb Starlings (*Cosmopsarus regius* and *Spreo superbus*). The latter has become a most popular bird, and a great number have been imported, being very hardy and easy to breed. Last year I related my success in breeding them for the first time in Europe, and since then others have been equally successful. I will now add a few words to complete my account of their nesting last year. It may be remembered that I was puzzled as to the sexes of my four birds, and only last autumn I discovered that I had three cocks and only one hen. The first bird, which was attacked by the other three which I had turned out of the aviary, was the hen bird. She had layed the eggs before she was removed from the aviary, and had nothing to do with the incubating or the rearing of the young. All this was very successfully done by the three male birds. Later on, when I put the hen back with one of the cock birds, she nested again, and hatched three young, which were not fully reared owing to the lateness of the season. This year the same pair reared three young early in May. Later they had nests and young ones on three occasions, none of which were fully reared on account of the extraordinary behaviour of the three first young ones reared. These insisted on continually feeding their younger brothers and sisters, and

consequently killed them by kindness, as they were also being fed by their parents. The Royal Starlings, of which I have three specimens, are probably the most beautiful of all Starlings, and the finest birds one can dream of. The accompanying plate shows that they are beautifully shaped birds and not lacking in colour. They sing a good deal and have a soft voice. I do not find them as hardy as the Superb and other Starlings, and they are not able to stand cold and damp weather. Mine are kept indoors all the winter and are turned out in the large aviary in the summer. Out of the three I have, two are always together, and are most friendly, but they showed no signs of nesting this summer. Both these Starlings make excellent cage-birds.

[Mr. Ezra has most kindly presented to the Society the very beautiful plate by Mr. Grönvold which accompanies the above article.—ED.]

THE GREY-HEADED GROUND PIGEON (*GEOTRYGON CANICEPS*)

By ALFRED EZRA, O.B.E.

This bird, which comes from Cuba, is about 10 inches long and about the size of a Bleeding-heart Pigeon, but thicker-set. The forehead is whitish-grey, changing into dark grey on the top of the head. Neck, dark grey with green and violet reflections; back, glossy violet changing into dark blue on the rump; whitish throat and a grey breast; middle of the abdomen reddish-white; under tail-coverts cinnamon; wings, greyish brown with purple and green reflections; primaries edged with cinnamon; bill, pinkish white at the tip and carmine red at the base; feet, pale pink; eye, vermilion red. Female: a little smaller and duller than the male. It is a very rare bird in Cuba, where it lives mostly on the ground in thickly wooded parts, and is threatened with extinction by the increasing cultivation of the country, so it is very advisable to breed and keep up the species in captivity. I got my pair from Mme. Lécallier who, I believe, has had four young ones from one pair of birds, and has had a good many more eggs. M. Decoux

has had several clutches but reared only one young bird. My birds had a nest and one egg in May, which came to nothing. Then they successfully reared one young one in June. All these clutches have been of one large egg of rather a deep buff colour, so it can be safely concluded that the bird lays only one egg. The newly-hatched bird is covered with yellow down. When leaving the nest, the feathers of the upper part are dark brown edged with reddish buff. The under parts are chestnut brown. Forehead, brownish grey and throat pale grey and a brown bill. When about two months old the bird moults into the adult plumage. They do not seem to be so insectivorous as the Bleeding-heart Pigeon, and although I have seen them eating mealworms, the young are brought up on seed. I believe I am the first to breed this rare bird in England.

ARRIVAL OF A VERY RARE DUCK
THE PINK-HEADED DUCK (*RHODONESSA*
CARYOPHYLLACEA)

By ALFRED EZRA, O.B.E.

After trying for several years I have at last been successful in obtaining some living specimens of the very rare Pink-headed Duck. This bird has become so rare that a good many people thought they were really extinct. By offering rewards to Indian bird-catchers my brother was successful in getting me five live specimens—three drakes and two ducks. They all arrived in perfect condition some time in July, and were at once turned out in my largest aviary, where there is a fair-sized pond. I am sorry to say that one drake died of an accident, and another, a month after arrival, of some affection of the eye. The three remaining ones, one drake and two ducks, are flourishing, and up to the time of writing (end of October) look wonderfully well. They are out all day long, but I shut them in at night. I hope they will survive the winter and breed next season. The unusual coloration of the adult male is a rich blackish brown with a white mirror on the wings. The head, side, and back of the neck, and bill, are of a delicate pink colour. The chin and

foreparts of throat and neck are brownish black. Legs and feet, brown. The female differs from the male by its head and bill, which are of a pinkish light brown. In shape this rare Duck reminds one of a very slender and elegant Pochard, and is about the size of a Wild Duck.

NOTE ON THE NORFOLK ISLAND PARRAKEET (*CYANORHAMPHUS COOKI*)

By the MARQUESS OF TAVISTOCK

Although, sad to relate, I have no breeding success to chronicle, the melancholy interest that attaches itself to any bird on the verge of extinction justifies a few notes on this interesting race of the Red-fronted New Zealand Parrakeet, once well known to European aviculturists. The brown rat, it appears, has overrun Norfolk Island with the usual consequences to the native fauna, and the Parrakeets, being ground-nesting birds, are said to be now extinct on all but one or two outlying islets where a few pairs may, perhaps, linger. Through the kindness of a friend I was able, in the summer of 1924, to obtain two pairs of Norfolk Islands, and my hopes of breeding them ran high, as the New Zealand Parrakeet has a reputation (undeserved in my own experience) of being easy to manage and very prolific. Ill-luck, however, attended the venture. A few days after their arrival an epidemic broke out among some Ceylon Hanging Parrots which had arrived on the same boat, and the infection had evidently reached the Norfolk Islands, two of which also fell victims. The survivors I turned into an outdoor aviary, shutting them up each night. They did well for some weeks and then the hen (?) got a chill and had to be brought into hospital. On her recovery I returned her to the aviary, but a short time after she got another chill and again had to be brought indoors. As the nights were getting cold, I decided, as a precautionary measure, to bring the cock in too. He was in splendid condition but two days later he fell ill and died, while his more delicate partner recovered! I later turned her into an old aviary where the shelter was kept at

a high temperature. Here she lived the greater part of the winter, but in April she suddenly succumbed to fatty degeneration of the heart. Shortly before her decease I had received two more Norfolk Islands, and at the same time I learned that I had been feeding my birds wrongly. It appears that they should have hardly any hemp or sunflower and should be fed almost entirely on canary seed and oats, with a few peanuts and apple. On this diet the last arrivals have done extremely well, but I fear that both are males, for although they show a difference in the shape of the head they have crimson eyes, while the eyes of the bird that died in April were much browner. In June I turned the couple into one of my newest movable aviaries, shutting them up at night and warming the shelter with brooder lamps. They are now clean moulted and have come through the latest weather eccentricities of, from an avicultural point of view, the most abominable year I can remember, without ill effects. In many ways the Norfolk Island is an interesting and attractive bird, very unlike most Parrakeets in some of its ways. It is about the size of a Pennant, but with a shorter tail. The plumage is green with a red cap. The beak is rather large and of a silvery colour merging into black. The toes are very long, as one would expect of a bird that spends much of its time on the ground. The Parrakeet's movements are very brisk and sudden, both in flying, running, and leaping from perch to perch. In the aviary they spend as much time on the perches as any other Parrakeet, a circumstance which rather surprised me, as I expected I might have to provide accommodation for practically terrestrial birds. The cry is peculiar—a soft "Heigh-ho!" varied by a gentle murmuring and a louder and somewhat goat-like bleat.

My Norfolk Islands seem to be intelligent birds. Though rather wild on arrival they soon learned that people outside the aviary will not hurt them and now permit a very close approach. One, in particular, rather objects to being shut up at night. He goes through the hole into the shelter docilely enough, but the moment my back is turned, as I go to let down the slide that closes this hole he is often out again like a flash and carefully conceals himself behind a board where he is invisible to anyone standing at the end of the

aviary. He executes this strategem with so much dispatch that it was by the merest accident that I discovered that he was still in the aviary flight the first time he tried it. I had, as I thought, shut both birds safely up for the night and sat down at some distance from the aviaries to watch some Barrabands I was training to fly at liberty and come home in the evening. After about a quarter of an hour I was surprised to see my friend the Norfolk Island still disporting himself in the open flight! Next time I drove him in I kept my eye on him and saw him whisk out again and hide himself the moment my back was turned. He knew perfectly well what he was about as, when let out in the morning, he never thinks of hiding. I have never seen a Norfolk Island attempt to climb wire-netting with the aid of the beak and they seldom use the foot to hold an object they are eating, nor do they often sit on one leg when at rest. Like most Parrakeets they are fond of nibbling the bark on their perches, but they do not damage exposed woodwork, nor bite holes in wire-netting.

FOOD PROBLEM IN AVICULTURE UNDER INDIAN CONDITIONS

By SATYA CHURN LAW, M.A., B.L., F.Z.S., M.B.O.U.

Although there is enough evidence to show that the practice of keeping birds in captivity in the East, and especially in India, was in vogue from the very earliest times, the species or varieties of birds so kept were usually those which could be easily reconciled to cage-life and would readily thrive on a diet which came handy to their keepers. Not infrequently the majority of these birds were graminivorous or omnivorous by choice, being very hardy and having a wonderful capacity for adapting themselves to changed circumstances as regards both food and environment. These keepers of bird-pets, although taking sufficient care of their charges, never aspired to solve the various problems which confront the modern aviculturist regarding proper food, suitable accommodation in the different seasons involving different degrees of temperature, humidity, etc., appropriate nesting sites, the limit to which birds of varied temperament and habits could be allowed to mix together, etc.

The idea of furthering the cause of science with the aid of aviculture, that is to say, by a study of the habits and life-history of birds belonging to the different parts of the earth, originated with the Westerners ; and although we sometimes find traces of sporadic attempts at bird-culture in Asia they can never be taken as the outcome of a serious study of bird-life from the scientific point of view. Nothing could better testify to the whole-hearted devotion of European aviculturists towards this end than the world-wide impetus they gave to the collection of rare species, the effect of which was felt in India. The desire of these devotees to science for stocking their aviaries with birds gathered and purchased at enormous cost from all parts of the world fostered a brisk trade amongst foreign bird-dealers, who set about collecting for exportation new species which were hitherto unknown as cage-birds. Indian bird-dealers were not slow to avail themselves of this opportunity and contrived with the aid of clever catchers to keep alive delicate insectivorous birds by means of an artificial diet. Hitherto the staple diet known to the Indians for insectivorous " soft-billed birds " was *satoo* and *ghee* mixed together, with an admixture of maggots. But this diet had little success with the smaller and more delicate insect-eating birds. The bird-dealers hit on the ingenious device of mixing meat and carrot with the *satoo* diet, and managed to keep these birds alive sufficiently long to cover the period of exportation. This served their purpose, no doubt, but for an aviculturist to achieve success with the aid of this diet, not only in keeping alive his charges for any length of time but also in encouraging them to breed and rear their offspring, is a knotty problem. A man with any experience of Indian conditions and the supply of insect food by professional Indians, is apt to be diffident of the value of such a diet. He knows that even minced meat will not much improve its quality, though it might have some success with a few larger insectivorous birds. In Europe the conditions affecting the supply of insect food is different—a rich and a varied menu, both live and preserved, is catered for, and people are never loath to supply artificial stimulation with the help of heat and electricity. Even prepared milk and kindred sources of food supply are available in plenty, so that the aid of science is brought in towards the solution of a very difficult problem in regard to aviculture.

To quote one example of this resourcefulness of Western aviculturists, the name of Mr. Alfred Ezra stands pre-eminent. It is through his efforts that such nectar-eating tiny birds as the *Nectariniidæ* are nowadays included in the category of cage-birds.

The ingenuity of the Indian bird-dealers is never on a par with that of European birdmen. But sometimes we find that the example of the latter is emulated by the Indian professionals who, in their zeal for making money by exporting Indian birds of various sorts, tax their brains to devise ways and means to reconcile wild-caught feathered folk to captivity. In the district of Barielly, for instance, there is a class of dealers who resort to the cruel device of stitching up the eyes of newly caught birds and hand-feeding them for a time, after which the latter settle down to their confinement, when their eyes are released. The effect of this process is marvellous, and I have seen such difficult and recalcitrant birds as the *Terpsiphone paradisi* and *Pericrocotus speciosus* quietly submitting to their altered lot and thriving on an artificial diet. Barielly, being a hilly region, it is the centre of a large supply of insectivorous hill birds noted for their song, colour and sprightly habits. Another means of keeping the wild newly caught birds reconciled to captivity is the provision of a suitable cage where these birds can be housed side by side with the tame and steadied birds belonging to the same species, genus or family and having many traits common to each other. The most inexpensive means which the Indian dealers have devised for providing such a house is no other than a rectangular cage of split bamboos with six or eight small compartments in it. A tame bird (one which has been steadied and reconciled to confinement for some time) is introduced into each of the compartments on its immediate right or left, so that the free and easy manners of the tame birds make the newly caught bird shake off its fright due to new surroundings. The feeding cups of the new captive are placed adjacent to those of its neighbours, so that, when it sees other birds taking food of their own accord, it gradually follows suit. Of course, forcible hand-feeding becomes necessary for some time till the new bird reconciles itself to its diet.

Although we have reasons to wonder over the rare achievements of these unlettered professionals, we can easily guess the motive which

spurs them to these occasional outbursts of ingenuity in the matter of keeping alive the wild and newly caught insectivorous Indian birds, viz., their greed for money-making. Hardly in all India will one meet with an unselfish aviculturist really worthy of the name. True, the craze amongst the Indians for cage-birds and other captive pets is as strong as among the inhabitants of many European countries; but the "fancy" chiefly consists in keeping a few birds of song or colour confined to a small cage and wrapped up carefully with one or two pieces of clean linen. Thus the Nightingale, Koel, Hawk Cuckoo, the Indian Plaintive Cuckoo, Common or Pied or Hill Mynah; a few species of Parrots, the Indian Bulbul, the Shama or Dhayal, sometimes a Kastura, a few Munias, or very rarely a Singing Bush Lark or the Crested Chendool are all that close the list of the Indian bird pets which are looked upon as the special subjects for the cage. That the caging of birds could have any ulterior purpose like the study of their habits, etc., which might add to human knowledge is unknown to the people of India, and they hardly understand or conceive the knotty problems as regards food, etc., which still baffle the expert aviculturist.

With this survey of Indian conditions and the growing bird trade in India, despite the local apathy towards the "hobby", it would not be out of place to record the experience of one who has drunk deep the Western spirit of scientific aviculture. My devotion to my hobby covers well over a period of fifteen years; and during this period I have had under my observation mostly the smaller Indian insectivorous birds like *Ægithina tiphia*, *Chloropsis aurifrons*, *Sturnia malabarica*, *Molpastes leucotis*, *Copsychus saularis*, *Cittocincla macrura*, *Merula unicolour*, etc., all of which attempted to breed and rear young in my aviaries. Without recounting the experiments which at first proved futile, I think it best without much ado to confine the attention of my readers to the crux of the whole thing, viz., the problem of food and food supply in the different seasons in the solution of which alone lies the secret of success. As I stated before, the supply of insect food in India is restricted to maggots which are reared in horse or cow dung by a class of professional bird-food suppliers, and a limited number of live grasshoppers. Minced meat is also catered for. But

the staple diet remains *satoo* and *ghee* mixed together. This diet, so far as my experience goes, might hold good for a caged specimen covered up day and night with linen in order to provide warmth and stimulation for song; but it would never do for a mixed company of birds kept in a spacious aviary provided with all the amenities which the modern experience in aviculture dictates. This ration can never afford sufficient nourishment during the rainy season and cold weather months; besides, its value as diet for the young during the breeding period is absolutely nil. Even if one adds egg-food and bread and milk sop with ripe fruits, matters will not improve. My experience with this diet with the Australian Finches, which require insect food during the nesting season, is not encouraging at all. During my experiments I wished vainly for the varied menu of insects such as is obtainable in England and Europe, e.g. mealworms, ants' eggs, and other prepared insectivorous food. Once I tried live crickets (and parenthetically I may mention here that, although India is rich in insect fauna, it is very difficult to get insects under the conditions prevailing in a city like Calcutta), and to my utter disappointment and mortification killed the three well-grown youngsters, almost wholly feathered, of a pair of Shamas breeding within the hollow of a bamboo pole hung up against my aviary wall! Since then I determined to set my face against this class of insects, and the idea suddenly flashed in my mind of trying with the *larva* and *pupa* of a class of red ants known as *Ecophylla smaragdina* which build among green leaves. Almost an unlimited supply of these insects could be had from my suburban country house, which contains an extensive grove of trees and shrubs. There is a dearth of these ants during the hot months, but otherwise for the rest of the year a continual supply may be obtained. Experimenting with these grubs I obtained results as good as I could look for, although sometimes I felt tempted to believe that the ration, unless provided in measured quantities, led to overstimulation of the nesting couples, which in one instance showed an unusual desire to commence nesting operations but little attempt to brood the eggs.

The nest of the red ants contains not only the larvæ and pupæ but also a number of workers and adult ants which can with difficulty

be separated from these so-called eggs (the real eggs can hardly be seen with the naked eye). These adult ants are also eaten by some of the hardier birds which take the precaution of beating them against the feathers of their wings or tail before devouring them. As I have mentioned before, this insect food if supplied with caution forms a valuable asset in the menu not only of insectivorous birds but of the Seed-eaters and delicate Finches, especially in the breeding season. With the aid of this insect diet my pair of Shamas could rear their broods successfully. Their first clutch of eggs began on the 13th May, 1923. One egg was destroyed. On the 27th the first young one was hatched and two more followed the next day. One of these died and was removed from the nest by the mother. On the 8th June the two surviving nestlings were completely feathered, and the next day when they left their nest I confined them in a large cage with their mother until they were able to feed themselves independently of the latter's help. Since the very birth of the young Shamas, I found the mother bird showing great care and discrimination in picking up the appropriate food for her offspring. For the first two or three days after the young were hatched she would touch nothing but ants' eggs (larvæ and pupæ of *Æ. smaragdina*) ; after that period she would take a few of the smaller green grasshoppers in addition to ants' eggs. Not until a fortnight after their birth did the mother give them a bit of the artificial menu—*satoo* and *ghee* mixed with minced carrot and yolk of fowl's egg.

The aforesaid larva food helped my Dhyal to rear her two young ones very successfully. Two or three days before the hatching of the eggs the only precaution I took (dictated by my previous experience) was to confine the cock bird in a wire cage hung up within the same aviary in which the female was incubating. In this case I saw hardly any necessity for supplying a varied insect menu. A daily supply of the ant larvæ in gradually increasing quantities gave the best results. Of the non-insect diet, varied as it was to meet the needs of a heterogenous group of birds located in the same aviary, the Dhyal never showed its dislike for the staple *satoo* diet mixed with some yolk of fowl's eggs ; but how far it relied on this in the matter of feeding its young soon after they were hatched it is hard to say. The

efficacy of the larva diet can easily be realized when we find the Dhyal chicks could fly out of their nursery (within a hole in the western wall of the aviary) only a little over a fortnight after they were hatched (date of hatching, 4th May, 1924; date when the young came out of nest, 20th May, 1924).

The red ants' eggs proved in several instances the most wholesome diet for my couple of Grey Partridges during the periods when their young ones were hatched. A pair of *Sturnia malabarica*, which were able to rear their young three times in my aviary, were observed to count to a great extent on this ration while the parents had to find food to bring up their new-born babes. It is worthy of note that non-insect food, like bread and milk sop or ripe fruit, was never discarded as unwholesome at this period, morsels of which, together with ants' eggs and maggots, were given regularly to the young by their parents.

Fruit-eating birds like the Bulbuls, *Molpastes leucotis*, *M. leucogenys*, *Otocompsa emeria*, displayed a wonderful fondness for the larva food exclusively for the first three or four days after the hatching of their young in my aviary. In another instance a pair of *Molpastes leucotis* gave preferential attention to the softer crickets and green grasshoppers, discarding the ants' eggs when their two young ones were six days old.

This diet of red ants' eggs, as I observed in many cases, gives a stimulus to many shy couples to think about nesting. Being fed on this diet, *Chloropsis aurifrons*—a record of whose breeding in captivity hardly exists—developed an inclination to nest so that I had a rare opportunity of observing the courting habits of the male bird. Unfortunately the sudden death of the female, due to an accident, cut short my prospect of further observation. Another shy couple, *Merula unicolor* (I might mention that both the birds were specially caught for my aviary and steadied by me), which met with many rebuffs from a bullying pair of *Copsychus saularis*, went to nest on the top of a bamboo pole hung on the north wall of the chamber in which they were housed and had three eggs which proved *clear* not once but three times, much to my chagrin and utter disappointment. I hope I shall have better fortune with this pair next time. A pair of Ioras (*Ægithina tiphia*)—both of them hand-reared—came into my possession during the fag-end of the last breeding season (1924).

Having had a regular supply of the ants' eggs, the male developed its native courting instinct and went through the faery antics, ejaculations and mellowed whistles so characteristic of this bird during the mating season. The female was appreciative of all this attention, and attempted to build a nest of fine coir. Unhappily her prospect was marred, partly due to the lateness of the season and partly owing to unsuitability of the place which she selected for her nest.

It may not be known to many of my readers that the Iora is far too delicate a subject for a cage, so much so that notwithstanding Finn's meagre record nothing is known regarding its life in captivity. In India, too, it is a *rara avis* for the cage-bird fancier. Happily my pair are in perfect breeding condition now, and I have already given them a spacious flight with shrubs and foliage, and expect better luck this time. I succeeded in hand-rearing two extra Iora nestlings mainly with ants' eggs, both of which are females and now grown up into healthy birds. It is worthy of note that once acclimatized and reconciled to captivity the Iora becomes quite hardy and is capable of holding its own in a mixed company.

I perceived the effect of the larva diet in the two striking cases where a pair of Chendool (*Galerita cristata*) and a pair of White Wagtails (*Motacilla alba dukhunensis*) thought of housekeeping and made abortive attempts at site selecting. The Rain Quail (*Coturnix coromandelica*) laid several eggs within its nest in a box, and the male bird's quaint manner of puffing itself out and uttering a reverberating sound not only captivated the attention of its mate but its human warder also. This note is peculiar to the breeding period.

The possibilities of the larva diet are well demonstrated in the several instances mentioned above. The fact that it is hard to get within the town of Calcutta and can never be had from the professional bird-food supplier does not detract from its supreme efficacy. A little search will soon reveal that there is an unlimited source of supply lying untapped near at hand in the suburbs. An aviculturist in India, situated as he is, must take pains to devise ways and means to get at the appropriate food for his birds; and his outings for this purpose to neighbouring rural areas are never expensive but are likely to confer incalculable good on his body and mind.

NOTES FROM RHODESIA

By SYDNEY PORTER.

(Continued from p. 272)

Giant Kingfishers (*Ceryle maxima*) seem to prefer the thick woods and forests that border on the rivers and streams rather than the more open parts. Always on the look-out for that arch-enemy of the bird world—man—if they see you there is a whirr of wings and they are gone. Sometimes, in a shady nook in a mimosa wood through which runs a clear, fast-flowing stream, I have watched these Kingfishers who, with the Pittas, seem to reign supreme in the green twilight, the whole demeanour of the former seemed to be dominated by nervous anxiety.

The colour of the bird is blackish-grey on the upper parts, the wings, and tail, and spotted with white. The head feathers are elongated and form a full bushy crest which is usually compressed, and only in odd moments of relaxation on the bird's part is it noticeable. The throat is a mixture of black and white, the lower parts rich rufous. The female differs in having the upper part of the breast white with a band of black spots across. The bill in both sexes is black.

The nesting habits and also the manner of fishing resemble those of its pied congenitor. There is one curious thing that I have sometimes noticed, that is, when the birds have been disturbed near their nesting-place, they would fly on to a small twig that grew out of the main trunk of a mimosa-tree and would apparently disappear, but upon close examination one found that the plumage of the bird harmonized so well with the lichen-spotted bark of the tree that the bird was rendered quite inconspicuous. This is the first time I have seen protective coloration in Kingfishers.

The Black-collared Barbet (*Lybius torquatus*) is fairly common in certain localities, especially around wooded kopjes where wild fruit trees are plentiful.

A bird about the size of the English Thrush but more stoutly built, a greyish-brown in colour, mottled with yellow on the back and wings, pale yellow below. The front part of the head, cheeks, and throat bright crimson, bordered behind with a broad collar of glossy black.

The flight feathers faintly edged with yellow, the secondaries broadly so. The two central tail-feathers black, edged with yellow. The rest greyish-brown. The thick, stout beak, black. Both sexes are similar.

For their size these birds have enormous vocal powers, and when a flock alights near at hand the noise is incredible. They live in small troops of about a dozen or less, never wandering far from their regular haunts, subsisting upon wild fruit and berries and no doubt, to a lesser degree, upon insects.

I have seen them feeding upon the small, round, and plush-like green unripe berries of an unnamed shrub. Their actions whilst feeding are very Parrot-like.

The nest is made in a hole in a tree, which the birds excavate themselves. This is a work of great patience on their part, as they do not chip the wood away as in the case of the Woodpeckers or Parrots, but gradually wear it away with a constant motion of the beak.

The birds will make a small hole first into a tree that some mysterious instinct tells them is hollow, and enlarge it from the inside. I have seen the hen with a good deal of squeezing get inside the hole and enlarge the entrance with a systematic semi-circular movement of the beak for half an hour at a time, the only part of her being visible was her bright red head. Sometimes she would stop her work and gaze at me with her beady black eyes.

There were two charming little Warblers of species quite new to me, the first a tiny creature the size of a Goldcrest with a long graduated tail that was kept in constant motion. In colour it was mouse-grey above and pure white below, the throat being divided from the breast by a thin black line. This tiny Warbler was one of the most fearless birds that I ever came across: whenever it saw a human being its curiosity would get the better of it and it would come within a few feet, viewing one from every possible angle, uttering all the time its sweet call-note.

The other was the Crombec Warbler (*Sylviella rufescens*), a perfect replica in colour and size of a Nuthatch, perhaps very slightly paler. It appeared to have no tail, but on close examination it could be seen but was so short that it was hidden by the tail-coverts; the beak was long and slender and slightly curved.

These birds associate in small parties of from four to ten systematically searching every leaf, branch, nook, and cranny for insects, usually minute ones, upon which they subsist.

Of all the elusive birds that I came across, the Angolian Pitta (*Pitta angolensis*) was perhaps the worst. It is so unobtrusive that very few white people in the part where I lived knew of its existence, and I am sure that when I described it to them they thought that I had pictured to them a bird of my imagination.

The following is a description of one of the most brilliantly plumaged birds in Rhodesia, the head straw-coloured with longitudinal stripes of black, the breast straw colour, and the under parts bright scarlet, the wings and upper back rich dark green, the wing marked with lazuline blue, the lower back also green, the tail dark green, the tail-coverts sky blue. A very noticeable feature is the large deep brown eye. The Pittas, as though conscious of the conspicuous colouring, frequent the dense undergrowth, seldom venturing out into the open. They seem to be equally terrestrial and aboreal, they seldom make long flights, only flying from branch to branch or tree to tree; it is when in flight that the scarlet under parts are so conspicuous, at other times if they see that they are being watched they will turn their green backs, which harmonize so well with the surrounding foliage, towards one, and watch with their heads turned completely round.

To watch these birds in their native haunts requires great patience. The best way is to move as slowly and quietly as possible through the woods with ears alert for the sound of the rustling of dead leaves. As soon as one hears that they should remain perfectly quiet and watch, and soon the eye will catch sight of the scarlet breast of our little friend as he runs here and there, with his stumpy tail bobbing up and down, systematically turning over the dead leaves, very much in the same manner as the English Blackbird, searching for insects upon which he feeds.

This Pitta is found in Equatorial Africa, seldom wandering further south than the Zambezi.

A pair will haunt a certain spot for a time and then suddenly disappear entirely from the neighbourhood. I know nothing of their nesting habits.

During my sojourn in Rhodesia I was singularly fortunate in seeing over 200 different species of birds that I was able to recognize, and many species that, of course, I was not able to. These latter included many small Warblers and Finches, many of which I think are unnamed. I was lucky in seeing all the species that I had previously desired to see, including the Ground Hornbill, the Pittas, Woodhoopoes, the Crowned Cranes, and last but not least the Great African Bustard (*Otis kori*), or "Gom Paauw" as it is called in Africa. This bird is rapidly being exterminated in Africa, and its total extinction will only be a matter of a few more years unless some drastic measures are taken for its protection. It is nowhere common, and many old Rhodesians have only seen it but a few times in their lives.

Its extermination from an economic point of view is greatly to be deplored owing to its feeding upon great quantities of locusts, grasshoppers and other obnoxious insects, but owing to the fact that it goes under the nomenclature of game birds and its being greatly esteemed for the pot, and, last but not least, to its large size, for it is the longest South African bird after the Ostrich, it is shot without mercy wherever it is found.

In Rhodesia solitary individuals are found roaming the country, seldom remaining long in one place, always shy, wary and suspicious; it is impossible to get within more than several hundred yards of them, and it will see one long before one sees it. When approached it will at first walk quietly away, but on nearer approach it will run several yards and then take wing. On hot days I have seen birds panting and gasping with the exertion of having to run, but when once on the wing the flight is by no means laboured or heavy, but consists of leisured, easy wing-beats; sometimes the bird will sail for a considerable distance. When startled it will fly about a quarter of a mile before settling.

In colour the Great Bustard is a mixture of brown, white and black; the feathers of the head, which are black, are elongated and form a full loose crest; the under parts are white. The neck feathers are long and loose.

The female is similar in plumage but, as in the European Bustard, is considerably smaller than her mate.

The Great Bustard inhabits the dry open veldt, and sometimes

when the grass is high and the bird partially concealed I have mistaken it for a small buck.

The eggs are laid on the bare ground with no pretence of a nest, are large, mottled, olive brown. The Black Kite (*Milvus korschun*) is fairly common, much to the chagrin of the farmers, for it is rather partial to Chickens and other small domestic birds, and therefore is shot on every occasion, which seems rather a pity because it must do a considerable amount of good in other ways by feeding upon rats, snakes, locusts, etc. It is easily distinguished on the wing from other birds of prey by its uniform dark brown colouring and by its comparatively long slightly forked tail which seems to be on a swivel, as it is always rotating from side to side when the bird is in flight.

Sometimes I have seen an individual bird hanging almost motionless in the air in a flock of flying ants, catching them with its feet and transferring them leisurely to its mouth.

The well-known Secretary Bird (*Serpentarius secretarius*) is to be seen fairly often, but cannot be regarded as common. A pair frequented a large paddock about a mile from the homestead where I was staying, where they could usually be seen making a systematic but dignified search of the ground for their food.

Secretary Birds are usually found in pairs, though I have occasionally seen odd birds on the veldt.

At a distance these birds look remarkable Crane-like both in regard to their gait and general demeanour. They will allow of a near approach, but when they think one has come far enough they will walk leisurely away, and it is only when one comes within close proximity that they take flight, flying perhaps 50 yards and then settling.

It is very much to be regretted that the protection afforded to this unique bird by the Rhodesian Government has been relaxed owing to the fact that it is said to occasionally eat small buck, but surely any trespass in this way is fully compensated by the sterling service that it renders by the destruction of snakes and obnoxious insects, etc. But although the protection has been relaxed I do not think that it is shot to any great extent.

I am sure that the Secretary Bird is too well known to need a description. The most noticeable features are the long grey and black

feathers of unequal length that spring from the back of the head and the extremely long central tail-feathers.

This bird is distributed over nearly the whole of South Africa, excepting the damp or forest regions. Usually the birds will attack a snake with their feet and trample it to death, using their wings as a shield, but it is a well-known fact that they will seize a snake, fly high into the air, and let it drop upon some rock. I have never seen this done myself, but I have been assured that it is quite true.

The nest, which is a huge flat-topped affair, composed of sticks, sods, etc., is usually placed on the top of a thick spreading tree. The eggs are two or three in number, and are a bluish-white colour.

The Snake Bird or Darter (*Plotus rufus*) is extremely common around the rivers in Rhodesia, and is seen usually sitting solitary on an exposed branch of a dead tree overhanging the water. In size and shape it is rather reminiscent of a Cormorant, but is of a more slender build. It is perfectly at home in the water, and is, as far as my observation goes, almost entirely aquatic, for even though it perches in trees it never seems to move about in them; it is never seen on land, and rises straight out of the water when disturbed. It swims with the body entirely submerged, only the long thin neck and head being visible above the water: it is then that the bird has a very reptilian look, especially when the narrow head is swayed from side to side in the manner of a snake.

It dives with great agility, and transfixes its prey, which consists of fish, with its dagger-like beak.

Black is the principal colour of this bird, the scapular feathers, which are long and pointed, and the lesser and medium wing-coverts have a central white stripe, the greater wing-coverts are dark bronze. There is a narrow white band bordering the throat and forehead; the lower throat and neck are rufous, and the bare throat is creamy white.

The nest, which is a rough and bulky structure of sticks, is placed in the fork of a tree overhanging the water. The eggs, which are from three to five in number, resemble those of a Cormorant.

A very well-known bird in Rhodesia is the Pale Harrier (*Circus macrurus*), well known because of its conspicuousness and not because

it is very common. At first sight one would be liable to mistake it for a Seagull. The adult male is a beautiful silver grey in colour, with the primary wing-feathers black, and is a conspicuous object in the landscape, sailing with easy and graceful flight, resembling a Seagull more than a Hawk, at no great distance above the ground, searching for its prey, which consists of rats, mice, small birds, large insects, lizards, frogs, etc. Sometimes when flying past the dark green m'sarsa-trees it appears white. The females and immature males are a brownish colour, marked with black, and one sees birds in all stages of transitory plumage. They appear to be migratory, as I have never seen them in the winter time.

The Black-breasted Harrier Eagle is a large and majestic bird, superior in size to the Golden Eagle. It is frequently seen with huge upturned, outstretched, motionless wings soaring at a great height, the pure white breast gleaming in the sunlight.

I have spent many fascinating hours watching with a pair of binoculars this grand bird searching for its prey, sweeping round and round in vast circles, sometimes only a few yards from the ground, the bright, gleaming, cruel eye ever on the watch for the slightest movement in the grass beneath.

This Eagle is very often mistaken for its congener the Martial Eagle (*Eutolmaëtus bellicosus*), which though found in Rhodesia is comparatively rare, but it can easily be distinguished as the Black-breasted Harrier Eagle is much darker in colour. "Black-breasted" is rather a misnomer, as it is only the throat and upper breast that is black, the whole under parts being snow-white with the exception of a few black markings on the flanks.

The Egrets, to my way of thinking, are the acme of grace and beauty, as anyone who has studied them in their natural haunts will verify. I have had the good fortune of being able to observe these birds at very close quarters. Rhodesia boasts of several species of these lovely birds, the commonest species being the Buff-backed Egret (*Bubulcus ibis*), locally designated the White Tick Bird.

In marshy places, in the vast malarial swamps, by the side of rivers or streams, or wherever herds of cattle are providing they are not too far from water, these birds will be found in flocks, comprising

sometimes hundreds of individuals. In summer time one seldom sees a flock of cattle without a flock of these birds in attendance, running in and out between the legs of the cattle, feeding not so much upon the ticks that infest the cattle as upon the insects that are disturbed as the beasts walk about.

One of the red-letter days of my stay in Rhodesia was when I discovered the roosting-place of the Egrets. In the evenings I had seen flock after flock winging its way down the river valley in an endless procession for perhaps over an hour, so one day I set out, tramping many miles down-stream in search of their night abode, thinking naturally that it would be some giant tree, easily discernible because of the accumulation of feathers and excrement underneath, but as evening came on and I was unable to find my objective I retraced my footsteps, disappointed at my failure ; but when about a mile from the starting point I noticed in the river two huge white objects that I had not seen before ; they looked like trees covered with snow, and upon approaching I soon saw that this was indeed the roosting-place of the Egrets.

There were thousands and thousands of them, and they completely covered two mimosa-trees in the river, and at a distance it was impossible to see anything of the trees. As I came within about fifty yards the whole flock took flight ; the roar made by simultaneous flight of the birds was incredible. The entire flock circled round for some time, and as I moved away settled down again on the trees with the usual bickerings and squabblings for places.

Since then I spent many pleasant hours in the proximity of those two trees. I was able to creep within quite close quarters, and with the aid of a pair of binoculars I could observe the birds as though they were only a yard or two away.

These beautiful creatures must be seen in their natural environment to be really appreciated. The graceful contour of the relaxed bird in its filmy nuptial plumage is a feast to the eye ; there is something about it that gives the impression of being too ethereal for the sordid mundane world.

Every now and again the filmy scapular plumes are raised and expanded so as to form a cascade over the back, and at the same time the elongated feathers on the head and neck are expanded.

I once thought that if only the females who deck their head-dresses with the feathers of these birds could but see them, so full of graceful vivacity, in the perfect setting beside the lotus river, they would relent and demand no more the product for which such bloody toll has to be paid—but, alas, I have been disillusioned.

The Buff-backed Egret is a migrant arriving in the early spring (September) and leaving in the autumn (April) for its breeding grounds in Europe and Northern Africa. When the birds arrive they are in the pure white undress plumage but shortly before they leave they assume the pinky-yellow feathers of the nuptial plumage.

One usually finds a small number of Snake Birds roosting with the Egrets, making a strange contrast.

The Great White Egret (*Herodias alba*) is sometimes seen, but it is never common. One usually sees a single pair inhabiting a marsh, and while one is feeding the other is keeping watch so that it is impossible to get very close up. No doubt this shyness is due in a great extent to the persecution it has received on account of its highly prized nuptial plumes, and although it is protected, great quantities of feathers are smuggled out of the country, especially from the Belgian Congo. One never sees this Egret in the company of cattle like its smaller congener, but it keeps exclusively to the marshes and pools. It is also a migrant, arriving about September or October and leaving in March or April.

The Little Egret (*Herodias garzetta*) and the Yellow-billed Egret (*H. brachyrhyncha*) are also occasionally seen in the large swamps, but are far from common. Their habits resemble those of their larger cousin, the Great White Egret.

(To be continued.)

THE BREEDING OF THE RED-HEADED CONURE (*CONURUS RUBROLARVATUS*)

By W. SHORE-BAILY

My pair of these pretty little Parrots came from the collection of the late Mrs. Burgess, where they had been kept in quite a small cage. Mr. and Mrs. Very Good, they were called. When excited both birds would repeat these words with great rapidity. The cock also speaks

two or three other sentences quite distinctly. They were very tame, and suffered Mr. Hedges, who had charge of them, to handle them freely. While not exactly afraid of them myself, I still have considerable respect for their powerful beaks, and if I want to shift them from one aviary or cage to another I prefer to get them to take hold of a stick, on which they can be carried anywhere. It is only necessary to catch one, as they are inseparable, and will follow each other everywhere. In spite of their habit of screaming they are most charming little birds, and I think one of the prettiest of the Conures. I think with a little trouble that they could be made quite good talkers. My birds are in an outdoor aviary, and have little chance of picking up fresh phrases or sentences. The only thing they have learnt since I have had them is to exactly imitate the cackling of a hen that has just laid an egg. This is not exactly musical, but it is a change from their natural scream. No doubt they think that having produced eggs themselves they have as much right to cackle as any old hen has. Quite early in June they took possession of one of my nesting-boxes, and on the 16th the first egg was laid. Four was the clutch, and of these two were hatched on or about the 19th July. I was away on holiday at the time, so cannot describe the young ones in down. When I returned and went to examine them, the cock greeted me with "I'm a very good girl" and "I'm your sweetheart", but the hen was silent, and as she pitched upon my head and began to take an interest in my ears, the glance I had at the young ones was only cursory. As far as I could see they were covered with greenish down, the heads only being feathered. They were then about three weeks old. A fortnight later I had another look, they were then feathered nearly all over, those on the back and wings being marked very much like those of the Lineated Parrakeet, with faint transverse barrings. On 1st September I had another look, as I thought it about time they should leave the nest. On lifting the lid of the box both birds flew out. They were quite strong on the wing. To my surprise the barrings on the upper feathers had disappeared and they were a uniform bright green all over, and but for their smaller size could not be distinguished from my White-eyed Parrots (*Conurus leucophthalmus*). I suppose that they will not get their red heads until their second or third year.

Writing of these birds in the *Avicultural Magazine*, 1st Series, Vol. VI, Mr. Goodfellow says: "These birds I saw offered for sale in Guayaquil at 5s. each, and no doubt at half that price they could have been bought. Being rather large birds they show off their colour to advantage. I imagine though that they must be rather noisy birds to keep, for they have a disagreeable shriek. They ought not to be at all delicate for we shot specimens near the volcano of Pāracé by Popayan in Columbia, at an altitude of over 8,000 feet. In passing through the little village of Carmen on our ride from Buenaventura to Cali, we saw the same birds in immense clouds coming from their feeding grounds in the high mountain forests to pass the night in the little sheltered valleys below. Carmen could boast of little else in the way of vegetation, but bamboos which grew in great thickets, and every branch of these giant grasses was literally weighing down with its burden of *C. rubrolarvatus*. The noise was simply deafening. Those we shot by the acid waterfall of Pāracé in the month of May, 1898, were undoubtedly nesting in the crevices of the perpendicular cliffs there; for on the report of our firearms numbers of them flew out screaming from the holes and ledges around. I noticed too that the plumage of some was dragged evidently by sitting on their eggs."

BIRD BREEDING AT CLERES IN 1925

By J. DELACOUR

The past breeding season has been rather successful. June and July were very fine, and when the bad weather set in, in August and September, many young birds were already strong enough to stand it.

It is true to say that our little valley is as wet and chilly at night, especially in the summer, as the worst English ones, and precautions must be taken, especially with freshly imported birds, which never ought to be allowed to sleep out of doors during their first summer with us; but now they are acclimatized most birds are living and breeding well. On the other hand, our winters are generally mild and animals and birds do not suffer during the cold months. However, a few birds have proved impossible to keep in good health out of

doors and I had to give them up, such is the case with the Guinea Fowls; others live well but do not lay, the Curassows for instance; others still live and lay well, but the young ones do not thrive after the first six or eight weeks: such are the Monauls. With the above exceptions all gallinaceous birds are very successfully reared.

The following list will give an idea of this year's results:—

White Rhea	8	Ashy-headed Goose	3
Monaul	1	Wild Muscovy Duck	9
Cabot's Tragopan	2	White-faced Tree Duck	8
Siamese Fireback Pheasant		Common Shellduck	6
(9 killed by polecat,		Mandarin Duck	1
when 3 months old)	18	South African Yellow-billed	
Manchurian Eared Pheasant	4	Duck	18
Horsfield's Kaleej	4	Abyssinian Yellow-billed	
Silver Pheasant	3	Duck	6
Bell's Pheasant	10	Spotbill Duck	9
Swinhoe's Pheasant	5	Falcated Teal	12
Edwards' Pheasant (1 killed		Hybrid Falcated and Gadwall	10
by polecats, when 3		Common Wigeon	7
months old)	8	American Wigeon	3
Hybrid Edwards and Swin-		Chiloe Wigeon	1
hoe's Pheasant	2	Hybrid Chilian Pintail and	
Imperial Pheasant (1 with a		Chiloe Wigeon	3
deformed leg had to be		Chilian Pintail	30
destroyed and one was		Bahama Duck	6
killed by polecats)	3	Hybrid Bahama and Brazilian	
Reeve's Pheasant	4	Teal	3
Elliott's Pheasant	4	Brazilian Teal	1
Golden Pheasant	20	Cinnamon Teal	2
Amhurst's Pheasant	10	Chestnut-breasted Teal	9
Red Jungle Fowl	20	Red-crested Pochard	4
Hybrid Javan and Red		Rosy-billed Duck	1
Javan Fowls	20	Common Pochard	10
Grey Polyplectron	4	Red-headed Pochard	18
Wild Turkey	12	Tufted Duck	7
Cereopsis Goose	2	Scaup Duck	1

Pea Dove	2	Bar-shouldered Dove	4
Martinique Dove	2	Peaceful Dove	4
European Turtle Dove	4	Diamond Dove	24
Madagascan Painted Dove	8	Red Mountain Dove	6
Double-collared Dove	6	Crimson-winged Parrakeet	1
Tigrine Dove	8	Budgerigars (different vars.)	80
Dwarf Ground Dove	12	Zebra Finches	30

Full details of the young birds have been given in *L'Oiseau* (1925, Nos. 10 and 11), and I shall only quote here the most interesting facts.

The greatest success was the first breeding in Europe of the rare Pheasants which I brought from Indo-China in 1924. Out of three pairs only one of Edward's Pheasants bred, laying three clutches, the second pair laid but two eggs, and the third none at all. A surplus cock Edward's mated to a Swinhoe's hen produced a pair of hybrids. A curious fact is that, although the Edward's Pheasant is a close relation of the Swinhoe's, its incubation is but twenty-one days, instead of twenty-five with all other *Hierophasis* and *Gennæus*, and also that the young birds take their full adult plumage at the first moult and are like the adults when six months old; they very likely breed the first year. I always suspected it, as I had never captured or heard of an immature specimen in the autumn or winter in Annam.

The rare Imperial Pheasants gave three young ones, but two met with accident, and only one, a female, was reared. The incubation period is of twenty-five days. The two pairs of Bell's Pheasants gave three and two clutches, and five pairs were reared. It is a very scarce bird in its natural haunts, only found on a few higher hills over 5,000 feet of altitude. It is darker and finer than the Silver, and just as hardy and robust. It had been bred before in the Paris Museum Menagerie, from the type specimen, between 1898 and 1903, but none were surviving after 1913. It has never figured in any other public or private collection. My Argus, although in perfect condition, stupidly laid in the winter, and the eggs proved unfertile. Different Firebacks—Bornean (*nobilis*), Vieillot's, Crestless—have not laid yet, but I have good acclimatized pairs which ought

to breed next season. A very interesting new race, of which a pair has been sent to me by my friend, Professor A. Ghigi, of Bologna, has been named by him after me, *Lophura sumatrana delacouri*; it resembles in every way the Bornean bird (*L. ignita*), but shows the pure white central tail-feathers of the Vieillot's (*L. rufa*).

My only Javan Jungle hen, imported last spring, did not lay, but I breed a good many young hybrids, and hope to build up in a few years a good strain of practically pure birds from half-bred pullets and pure Javan cocks, of which I possess three beauties; Javan hens are almost never imported, as bird-catchers do not care to trap them on account of their dull plumage.

Interesting additions to the Duck collection have been Eiders and Cotton Teal; two pinioned pairs of the latter are now on the lake.

The scarce Chestnut-breasted Teal, of which I have two drakes and five females (adult), have produced three young ones in the spring, all females; seven more were hatched in August, three of them only surviving the exceptionally cold and wet weather we had, and four more were hatched in September; three of them can be considered as safe now. The fourth one had been overlooked, and remained a few days on the lake, then disappeared; the drake always kept with the mother, an uncommon habit with Ducks, and looked very carefully after the young one, attacking other Waterfowl which came too near. It is most annoying that, through inbreeding, the percentage of females is so high among the young birds; but I hope to have at least two drakes in other youngsters.

I have recently received Great Bustards from Spain, through the kind help of Captain and Mrs. R. Paget, and they make a very valuable and long-desired addition to the bird collection.

I have been rather successful with Budgerigars; a good number have been bred from a mixture of Blue, Olive, Green, and Yellows, ten pairs altogether; about twenty Blues were reared, but I was lucky enough to obtain five Cobalt or Mauve without ever having had to purchase any of this pretty but costly variety. They have been produced, I think, by Greens issued from Olive cocks and Blue hens.

Mme. Lécallier had a very successful season with Parrakeets

and Doves, breeding amongst others *Geotrygon caniceps* for the first time in Europe; four young have been reared so far; she also bred the Plumed Ground Dove and has two pairs of Bartlett's Bleeding-hearts incubating now. As usual, M. Decoux bred many Finches, Parrakeets, and Doves; he had several broods of Parrots, Finches, and also some *G. caniceps*, after several failures; his best success has been the breeding of two Silver-eared Mesias, which species had never been reared completely before, as the young ones had always died after a few days out of the nest. M. Decoux's birds cannot be distinguished now from the parents. Both Mme. Lécallier and M. Decoux have bred Blue Robins and Shamans this year.

CORRESPONDENCE

THE SUCCESSFUL REARING OF LAYARD'S BULBUL

SIR,—I purchased a pair of Layard's Bulbul (*Pycnonotus layardi*) last spring, and turned them out in one of my large aviaries with a good many other birds. In May they built a nest in a Portugal laurel and laid two eggs. Both of these were clear. The next nest was built on some faggots in the indoor aviary. Soon there were two hungry young ones looking over the nest, and the parents fed them all day long. Unfortunately the cock bird died, but the hen took full charge and reared the young ones successfully. As one had a deformed leg I destroyed it, but the other is perfect and looks exactly like the parents. This bird comes from Africa and makes a splendid aviary bird. Colour, olive brown with a darker head and a yellow vent. I believe this bird was bred some years ago by Dr. Amsler, but the event was not recorded.

A. EZRA.

CHAFFINCH-CANARY HYBRIDS

SIR,—In the 24th September number of the *Die Gefederte Welt* a Westphalian breeder (Herr Disselhoff) reports that he has bred and reared two Chaffinch-Canary Mules from four eggs hatched. The event occurred in a large cage; of the two survivors one favoured

the father, the other the mother, in markings, and both were beginning to sing at the time of writing, 30th August.

On this the Editor (a Thomas, as we most are, in regard to this cross) comments as follows :—

“ This is really a most remarkable achievement of Herr Disselhoff's —Chaffinch-Canary hybrids on the wing—for although eggs and nestlings have frequently been reported, none have till now been known to have been reared, and any records of such must, as Barth in his book *Mule-breeding* says, be received with the greatest caution, particularly the one, which appears in one book, of six broods of these hybrids, one after the other.”

We must agree and hope for further details and additional evidence.

E. HOPKINSON.

RARE AMAZON PARROTS

SIR,—Among the new or rarely imported birds described in recent numbers of *Die Gefiederte Welt* are three of the Amazons.

1. The Spectacled Amazon (*A. albifrons* Sparrm.), from Central America, about which we have an account of a very clever, tame bird, which delighted in playing with the children of the house.

2. The Yellow-bellied (*A. xanthops* Spix.), from Brazil, which is stated to have been in Hagenbeck's Collection at Stellingen.

3. The Panama Amazon (*A. panamensis* Cab.), from Panama and Colombia, which has only once been imported—two specimens only—by the same importer in 1879.

I think I have seen No. 1 at a Show or elsewhere, and from Neunzig's book (p. 698) it appears that its first arrival in Europe was to the London Zoo in 1873. Can any reader add further information about the importation and cage-life of this or the others ?

E. HOPKINSON.

BREEDING THE MEXICAN ROSE-FINCH

SIR,—Perhaps you will be interested to know that I bred the Mexican Rose-Finch in 1913. I published a short account of the nesting of this species in the *Revue française d'ornithologie* for

January, 1914. I think I was the first breeder of this species in Europe. The bird is rather interesting in addition to his lovely song, for the red of his plumage becomes dull orange in captivity.

A. DECOUX.

[The Mexican Rose-Finch bred successfully in the London Zoological Gardens in 1912, 1913 and 1915. See *Avicultural Magazine*, 1912, p. 286.—ED.]

DEFECTIVE BUDGERIGARS

SIR,—I shall be much obliged if you will be so kind as to answer the following query!

I have purchased a fine adult Olive Cock Budgerigar, and also a hen blue. The latter bird I got cheaply, as it has deformed wings. The man I bought it from tells me that this is due to inbreeding, is that so? The only thing that is wrong with her is that the flight feathers have not grown. Do you consider that these will come right when she moults, or not? If not, do you know of anything I can do for her to improve them and is she likely to breed in this condition? I should be obliged if you will also kindly give me as full details as possible as to the best diet for them. Though I have kept Budgerigars for years, and been very successful with them, these are the first of the more valuable varieties that I have had and I wish to do the best for them I can.

THOS. L. S. DOOLY.

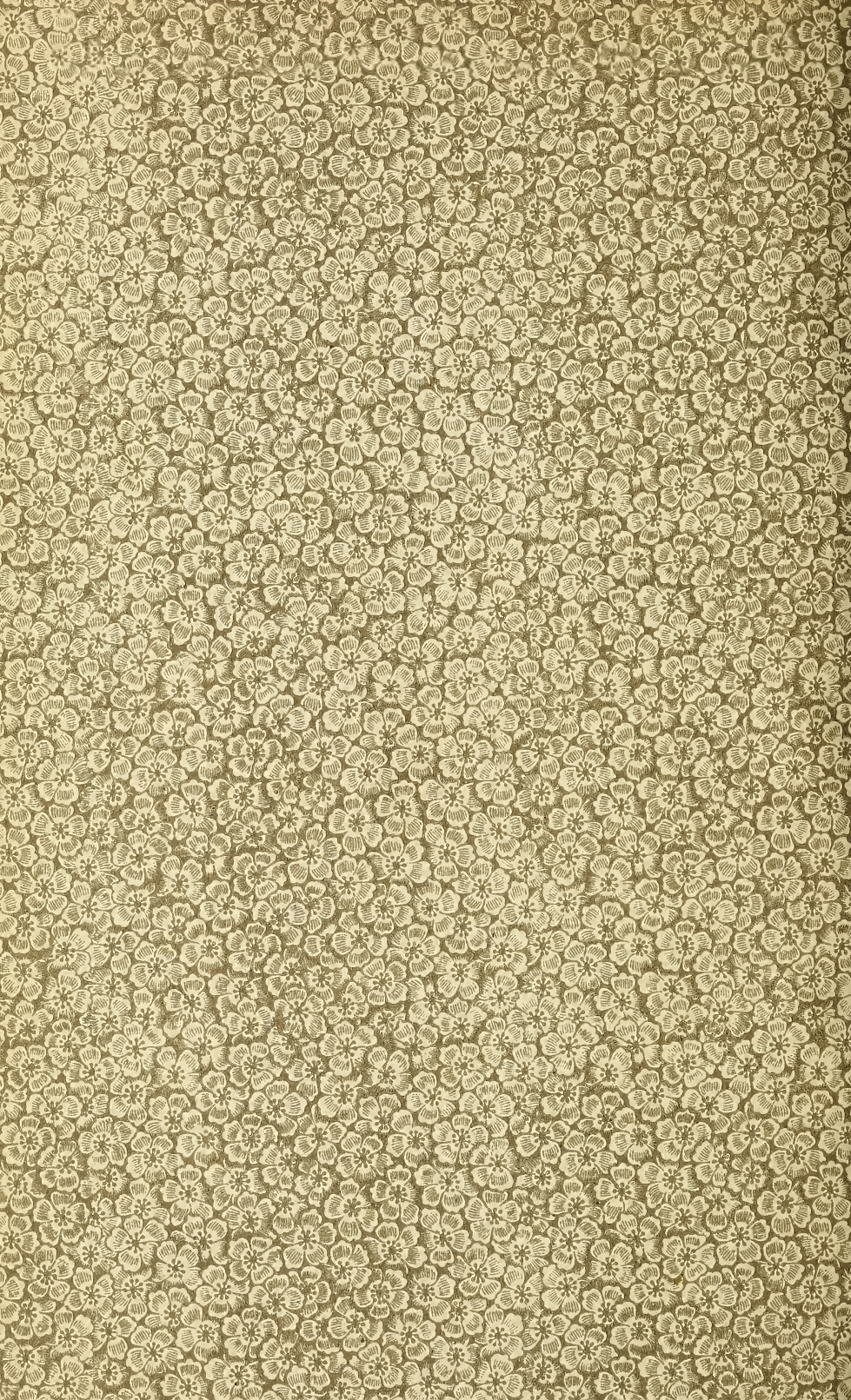
[Budgerigars with defective flight-feathers or no flights at all are not likely to recover these feathers and are useless for breeding. It is a condition popularly known as "French Molt", to which Budgerigars are subject, especially when they have been bred under very artificial conditions, and the blue variety which is often in-bred and lacks the stamina of the normally-coloured bird is particularly liable to it.

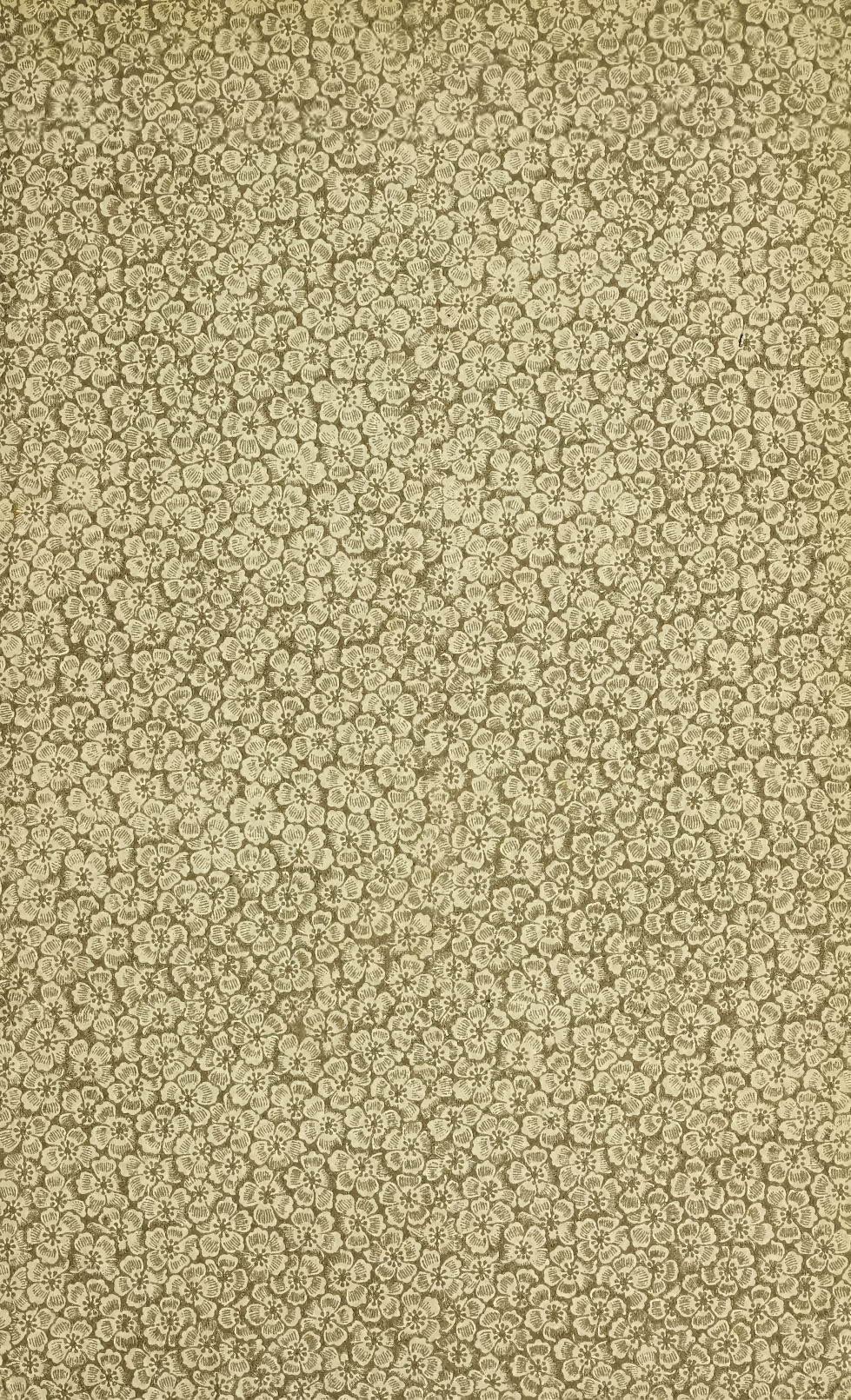
Budgerigars should be fed upon sound canary-seed and spray millet and given plenty of green food, especially flowering grass and chickweed, and when there are young to be fed stale bread soaked in cold water and squeezed out is useful. We believe that some breeders of Blues add a small quantity of good insectivorous food to their diet. Cuttle-fish bone should always be supplied.—ED.]

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